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Detrital zircon age distribution from Devonian and Carboniferous sandstone in the Southern Variscan Fold-and-Thrust belt (Montagne Noire, French Massif Central), and their bearings on the Variscan belt evolution

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Abstract

In the Southern French Massif Central, the Late Paleozoic sedimentary sequences of the Montagne Noire area provide clues to decipher the successive tectonic events that occurred during the evolution of the Variscan belt. Previous sedimentological studies already demonstrated that the siliciclastic deposits were supplied from the northern part of the Massif Central. In this study, detrital zircon provenance analysis has been investigated in Early Devonian (Lochkovian) conglomerate and sandstone, and in Carboniferous (Visean to Early Serpukhovian) sandstone from the recumbent folds and the foreland basin of the Variscan Southern Massif Central in Montagne Noire. The zircon grains from all of the samples yielded U-Pb age spectra ranging from Neoproterozoic to Late Paleozoic with

several age population peaks at 2700 Ma, 2000 Ma, 980 Ma, 750 Ma, 620 Ma, 590 Ma, 560 Ma, 480 Ma, 450 Ma, and 350 Ma. The dominant age populations concentrate on the Neoproterozoic and Paleozoic. The dominant concordant detrital zircon age populations in the Lochkovian samples, the 480-445 Ma with a statistical peak around 450 Ma, are interpreted as reflecting the rifting event that separated several continental stripes, such as Armorica, Mid-German Crystalline Rise, and Avalonia from the northern part of Gondwana. However, Ediacaran and Cambrian secondary peaks are also observed. The detrital zircons with ages at 352-340 Ma, with a statistical peak around 350 Ma, came from the Early Carboniferous volcanic and plutonic rocks similar to those exposed in the NE part of the French Massif Central. Moreover, some Precambrian grains recorded a more complex itinerary and may have experienced a multi-recycling history: the Archean and Proterozoic grains been firstly deposited in Cambrian or Ordovician terrigenous rocks, and secondly re-sedimented in Devonian and/or Carboniferous formations. Another possibility is that ancient grains would be inherited grains, scavenged from an underlying but not exposed Precambrian basement.

Keywords: Detrital zircon provenance analysis; Foreland basin; Fold-and-Thrust belt; Variscan Belt; Montagne Noire

1. Introduction

Sedimentological and provenance studies of the terrigenous detritus found in the foreland basins are used since a long time to analyze the geomorphologic and tectonic evolution of orogens, particularly the uplift and erosion of the inner zones of mountain belts. More recently, age distribution probability of detrital zircon enclosed in terrigenous unmetamorphosed or low-grade metasedimentary rocks became a popular method to infer the possible source area of the sediments (e.g. Dickinson and Gerhels, 2009; Fedo et al., 2003). This approach has been applied all along the Paleozoic Variscan belt from Iberia to Turkey, through Central Europe (e.g. Fernández-Suárez et al.,

2002, 2003; Martínez Catalán et al., 2004, 2008, 2016; Linnemann et al., 2004; Okay et al., 2011; Dinis et al., 2012). Nevertheless, such inherited detrital zircon provenance analyses are rare in the French Variscan Belt. Studies are limited to the Southern Massif Armoricaín (Ducassou et al., 2014) or Massif Central (Melleton et al., 2010). This last work dealt with magmatic and metamorphic rocks: 7 orthogneiss, one metarhyolite, and 6 paragneiss sampled in the western part (Limousin area) of the French Massif Central. Only one Cambrian metasandstone was investigated. Provenance studies from detrital zircon have never been carried out in the southern foreland basin that crops out in the southern part of the French Massif Central. This study focuses on the detrital zircon age distribution of the Late Viséan-Early Serpukhovian turbiditic sandstone, and also on Early Devonian (Lochkovian) detrital rocks that unconformably overlie the Ordovician sandstone involved in the recumbent folds of the southern flank of the Montagne Noire (Fig. 1). The significance of the statistical distribution of zircon ages for the tectonic evolution of the French Massif Central is discussed.

2. The Variscan French Massif Central

The Variscan orogen is a complex belt built up by multiple collisions of continents and microcontinents that develops from SW Iberia to Poland over ca 5000 km along strike and 1000 km in width. A general zonation, and several geodynamic evolution models have been proposed (e.g. Matte, 1986, 2001; Cocks, 2000; Franke, 2000, 2014; Martínez Catalán et al., 2009; Faure et al., 2005, 2009; Ballèvre et al., 2009; Schulmann et al., 2009; Lardeaux et al., 2014).

The French Massif Central (FMC; Fig. 1) is one of the largest Variscan massifs. It consists of a stack of nappes developed at the expense of sedimentary and magmatic rocks belonging to the southern margin of Gondwana (e.g. Faure et al., 2009 and enclosed references). From top to bottom, and globally from North to South, the following units are recognized. The Upper Gneiss Unit (UGU) is formed by a bimodal magmatic association (termed the "leptynite-amphibolite complex") with acidic and mafic rocks, and paragneiss. This unit contains high-pressure rocks (eclogites and

granulites) dated at ca 420-400 Ma (Pin and Peucat, 1986). The upper part of the UGU consists of migmatites yielding zircon U-Pb ages around 385-380 Ma. The Lower Gneiss Unit (LGU) is composed of metagreywacke, metapelite, metarhyolite, and a small amount of mafic rocks, metamorphosed into amphibolites. Cambrian and Ordovician alkaline porphyritic granites, now transformed into augen orthogneiss, intruded the sedimentary-volcanic series. Like the UGU, the LGU experienced a Late Devonian crustal melting dated around 375-370 Ma. The Para-autochthonous Unit consists of a metapelite-metagreywacke series with rare mafic lava, and intruded by rare orthogneiss. Zircon from the magmatic rocks indicates Ordovician ages. The southernmost part of the FMC contains clastic sediments of Late Viséan to Serpukhovian age, which were incorporated into the grossly southward propagating fold and thrust belt. The southern foreland basin consists of a Middle Viséan basin. Since the last two units are well developed in the Montagne Noire that constitutes the topic of this paper, stratigraphic and structural details will be provided in the following section.

Other lithotectonic and magmatic units of the FMC are exposed in limited areas. Devonian rocks crop out in the NE part (Montagne Bourbonnaise and Morvan area, Fig. 1). The Brévenne ophiolitic Unit, exposed west of Lyon, consists of mafic rocks (gabbro, diabase, pillow lava, and volcano-clastites), serpentinites, and siliceous sedimentary rocks (e.g. Pin and Paquette, 1998; Leloix et al., 1999). To the North, the Somme series consists of acidic to intermediate volcanic rocks (lava flows, pyroclastites) interlayered with sandstones, grauwackes, conglomerates and limestones (Delfour, 1989; Schneider et al., 1989). The Somme series and Brévenne ophiolites are interpreted as a magmatic arc and a back arc basin, respectively. This system developed in the upper plate of a South-directed subduction (Faure et al., 2009). The low metamorphic grade Upper Units that develop from the southern margin of Limousin to the Albigeois area, North of the Montagne Noire, consist of Cambrian-Ordovician sedimentary and volcanic formations.

Furthermore, in the northern part of the FMC, the Late Viséan "Tufs anthracifères" series formed by conglomerates, sandstone, mudstone with coal measures and rhyolitic to dacitic volcanites and volcano-sedimentary rocks represent an important time marker, as this series unconformably covers the tectono-metamorphic stack of nappes of northern Massif Central whereas, at the same time,

in the south, the Fold-and-Thrust belt is still developing. The Variscan magmatism is also well developed in the FMC. After an Early Carboniferous event represented by the biotite ($\pm$ cordierite) Guéret massif, the Visean magmatism, represented by "red granites", microgranites, and dykes coeval with the "Tufs anthracifères" series, is dominant in the NE Massif Central, in Morvan and Montagne Bourbonnaise (e.g. Duthou et al., 1984; Leistel and Gagny, 1984; Binon and Pin, 1989; Pin and Duthou, 1990; Pin, 1991). Lastly, Serpukhovian to Baskhirian (or Namurian to Westphalian in the W. European stratigraphic scale) plutons, represented by two-mica peraluminous and biotite-K feldspar megacrysts monzogranites, are widespread all over the FMC.

This stack of nappes was built up throughout several tectonic-metamorphic events. A polyorogenic evolution accounts well for the present architecture (e.g. Faure et al., 2009; Fig. 1). In this view, a Silurian-Devonian eo-Variscan cycle was responsible for the development of the high pressure-medium temperature (D_0 event), followed by the crustal melting (D_1 event) observed in the UGU and LGU. The Variscan orogenic cycle developed during the Latest Devonian (Famennian) and Carboniferous. The major tectono-metamorphic event (D_2), coeval with a medium pressure-medium temperature metamorphism, is characterized by a top-to-the-NW ductile shearing. This D_2 event was dated at ca 365-360 Ma (Melleton et al., 2009; Do Couto et al., 2015). The next D_3 event developed in the southern MCF with a clear geographic and chronological evolution. From North-South, the UGU and LGU were reactivated, and transported upon the Para-autochthonous Unit, itself emplaced upon the Fold-and-Thrust Belt, and then in the foreland basin. The consistent top-to-the-South shearing and thrusting became younger and younger from North to South, namely from Early Visean (ca 345 Ma) in the Margeride up to Late Visean- Early Serpukhovian (ca 330-325 Ma) in the Montagne Noire.

At the scale of the entire Massif Central, the Late Visean period represents a turning point since the D_3 nappe stacking active in the southern part was coeval with the onset of orogenic extension in the northern part of the massif. The emplacement of the Late Visean (ca 330 Ma) dyke swarm belonging to the "Tufs Anthracifères" series was controlled by a NW-SE crustal stretching. Nevertheless, the main time for crustal extension, as represented by the syntectonic emplacement of peraluminous granites and K-feldspar porphyritic monzogranites, took place in Late Serpukhovian to

Bashkirian (ca 320-315 Ma; Fig. 1). This tectono-magmatic phase will not be presented here as this event post-dates the deposition of the sedimentary rocks in the foreland basin. On the contrary, the Tournaisian to Middle Viséan magmatism observed in the northern FMC will be presented in the discussion section as it might be interpreted as a possible source for the detrital zircons deposited in the Late Viséan-early Serpukhovian foreland basin.

3. The Montagne Noire

Since early works (e.g. Gèze, 1949; Arthaud, 1970), the Montagne Noire, in the southernmost part of the FMC, is subdivided into a northern flank and a southern flank formed by folded and thrust sedimentary formations, separated by a metamorphic, granitic, and migmatitic Axial zone (Fig. 2). Due to the low metamorphic grade experienced by the sedimentary series, the southern flank is a well-known area for Paleozoic biostratigraphy (e.g. Alabouvette et al., 2003). In the following, only a brief lithostratigraphic outline is provided here; details can be found in numerous papers (e.g. Engel et al., 1980-1981; Feist, 1985; Feist and Galtier, 1985; Alvaro and Vizcaïno, 1998; Vizcaïno and Alvaro, 2001; Poty et al., 2002; Vachard and Aretz, 2004).

The Early Ordovician rocks (Fig. 3) conformably overlie Early Cambrian green sandstone, grauwacke and limestone. A ca 15-20m thick white massive quartzite covers a 500 to 800 m thick alternation of sandstone, siltstone and mudstone of Tremadocian age. These turbidites are interpreted as contourites (e.g. Alabouvette et al., 2003) deposited along a passive continental margin during the rifting event that separated the Armorica microcontinent from the main part of Gondwana (Matte, 2001; Faure et al., 2009). In the Montagne Noire, the upper Ordovician and Silurian deposits are generally missing, except in the olistoliths known as the "Ecaïlles de Cabrières" (or Cabrières Schuppen, Fig. 2). There, they consist of mudstone, sandstone, black shale and rare limestone. The absence of the late Ordovician and Silurian rocks is interpreted as a consequence of the emersion and erosion of rift shoulders that followed the early Ordovician rifting (Alabouvette et al., 2003). Under

tropical climatic conditions, a Fe-rich laterite developed. The Devonian formations are known only in the southern flank of the Montagne Noire. The Early Devonian (Lochkhovian, ca 416-411 Ma), deposit unconformably overlies the Early Ordovician sandstone (Fig. 4a). The basal conglomerate reworks lithic fragments, laterite, andesites, silcrete, phosphatic clasts, micaschists, volcanic quartz grains, and magmatic or metamorphic minerals such as garnet, zircon, monazite, rutile, tourmaline, allanite (Feist, 1985; Quémart et al., 1993). Sedimentological studies indicate that this material was supplied from a northern source (Feist and Schönlaub, 1973, Feist, 1985, Quémart et al., 1993). The sedimentary series continues with iron rich sandstone, oolitic ferruginous sandstone, and dolomite. This ca 15 m thick basal sequence is overlain by white massive sandstone with quartz arenite called "mur quartzeux" (quartzose wall) reworking abundant zircon, rutile, and tourmaline (Figs 3, 4b).

The Middle and Upper Devonian rocks consist of shallow water limestone and dolomite. The carbonate platform develops widely in the North Gondwana margin in Pyrenees, Mediterranean Variscan massifs, (SE Spain, Calabria, Kabylia, Sardinia, Sicily), and farther East in Middle East, up to SE Asia. The Late Devonian (Famennian) carbonates are represented by typical red nodular limestone known as "griotte facies" (Fig. 3) that denotes a high-energy slope environment indicating the onset of the drawing carbonate platform. The Early Carboniferous (Tournaisian) is represented by a ca 30 m thick black radiolarian chert (lydite), and a ca 20 m thick succession of siliceous limestone, clayed and bioclastic limestone, argillite, breccia and limy turbidite locally known as "calcaire de Faugères". The Devonian carbonate platform that progressively subsided during the Tournaisian was replaced by silico-clastic sedimentation during the Late Visean. The cm-scale alternations of siltstone and sandstone representative of distal turbidite were followed by more proximal deposits characterized by 1 to 5 m thick coarse-grained sandstone with intraformational conglomerate, disrupted beds, and slumps, Fig. 4c, d, e). Lastly, the chaotic sedimentation gave rise to an olistostrome with m- to km-sized olistoliths composed by Visean or Devonian limestone, and rare Silurian and Ordovician sandstone and lava. The lower part of this turbiditic series yielded late Visean goniatite (Bohm, 1935; Engel et al., 1980-81). Early Serpukhovian (Namurian A) plants have been recovered from turbiditic mudstone (Feist and Galtier, 1985). More recently, corals, foraminifera, and algae indicating a Late

Visean to Early Serpukhovian age for some of the limestone blocks have been documented (Poty et al., 2002; Vachard and Aretz, 2004). Thus in the present state of knowledge, a Serpukhovian age (ca 325 Ma) is inferred for the olistostrome.

From the structural point of view, the Montagne Noire is well known for km-scale, south-verging recumbent folds (Arthaud, 1970). The uppermost recumbent fold, called the Pardailhan nappe, consists of an inverted series of Cambrian, Ordovician and Devonian sedimentary rocks tectonically overlying another inverted series of Ordovician, Devonian, and Carboniferous series, called the Mt-Peyroux nappe. This lower recumbent fold tectonically overlies a series of autochthonous and para-autochthonous tectonic units emplaced within the Late Visean-Serpukhovian foreland basin that can be considered as a flexural basin (Fig. 5). Whatever the detail of this complex fold-and-thrust belt, the mechanism of which remains poorly understood (e.g. Perrin et al., 2013), there is a general agreement to acknowledge both a northern origin of the detritus reworked in the foreland basin, and also a bulk southward direction of the tectonic transport responsible for the emplacement of the recumbent folds and the formation of the flexural basin. Although the root zone of the recumbent folds is not precisely settled, on the basis of stratigraphy and facies correlations, it should be located in the southern part of the Montagne Noire north flank, and partly in the northernmost part of the Axial zone (Arthaud, 1970; Demange, 1993; Alabouvette et al., 2003). It is worth to note that the Axial Zone does not represent a pre-Variscan basement since most of the orthogneiss exposed there are Early Paleozoic granitoids (Roger et al., 2004; Faure et al., 2010). Instead, the Axial Zone was involved in the south-directed tectonics responsible for the recumbent folds (e.g. Alabouvette et al., 2003; Faure et al., 2014, and enclosed references). The metamorphic Axial zone, and the recumbent folds represent the infrastructure and suprastructure of the same stack of nappes, respectively (Fig. 5).

4. Sample description

In this study, samples for detrital zircon analysis come from two parts of the stratigraphic column (Fig 3; Table 1). The basal Devonian (Lochkhovian) black microconglomerate (MO 23, 24) crops out in the northern subunit of the upper recumbent fold (Malviès synform). The overlying white quartzite was sampled in the lower recumbent fold, near the Lower Landeyran bridge (MO 18); and in La Guette, west of Roquebrun (MO 22A).

The analyzed black microconglomerate samples (MO 23, 24) consist essentially of 1mm to 1cm-sized clasts of quartz and subordinate feldspar and lithic elements enclosed in a black matrix (Fig 6d). The quartz grains exhibit deformation microstructures such as undulose extinction, subgrain boundaries, and more rarely dynamic recrystallization with core and mantle structure.

The white quartzite (MO 18, MO 22A) is formed by well rounded quartz grains. Heavy minerals such as zircon, monazite, rutile, and tourmaline can be sometimes observed under the microscope (Fig 6c).

The Late Visean-Serpukhovian terrigenous rocks belong either to the lower recumbent fold (MO 17, 13 FR 52) or to the autochthonous foreland basin (MO 15, MO 16, and MO 26). Whatever their structural position, the analyzed samples are mature sandstone with mm-sized quartz grains. Detrital muscovite is commonly observed (Figs. 6 a, b).

5. LA-ICP-MS zircon U-Pb analytical procedure

Standard heavy liquid and magnetic separation techniques have been used to separate zircons from samples. After handpicking, zircon grains were mounted in epoxy resin and then polished to section the crystals for analysis. Before experiments, all zircons were photographed in both transmitted and reflected light under a microscope, and cathodoluminescence (CL) images were obtained by a CAMECA electron microscope. Based on these photographs, internal structures of zircons have been carefully examined.

Laser ablation ICP-MS zircon U-Pb analyses were conducted on an Agilent 7500a ICP-MS with a 193 nm laser at the MC-ICP-MS laboratory, Institute of Geology and Geophysics, Chinese Academy of Sciences in Beijing. U-Th-Pb ratios and absolute abundances were determined relative to the standard zircon. Detailed analytical procedures are described by Xie et al. (2008). The spot diameter is 44 μm or 60 μm in size. Correction of common lead was applied following the method described by Andersen (2002). The GLITTER program was used for data processing (van Achterbergh et al., 2001). Uncertainties on individual analyses in data tables are reported at a 1 σ level. Age diagrams of samples plotted using the Isoplot program (Ludwig, 2003). Zircon ages younger than 1000 Ma are based on $^{206}\text{Pb}/^{238}\text{U}$ ratios whereas ages older than 1000 Ma are based on $^{207}\text{Pb}/^{206}\text{Pb}$ ratios. In this study, we excluded zircon age analyses with >10% discordance.

6. Description of the zircon U-Pb analytical results

All analyzed samples, yield zircon detrital grains with a wide range in size from 50 μm to 200 μm (Fig. 7). Except several prismatic, most of the grains have a rounded shape with abraded crystallographic faces indicating important fluvial transportation. Most of the grains exhibit a zonal structure with an inherited core surrounded by recrystallization rims with clear oscillatory zoning. Due to analytic constraints on the beam size, only the large grains have been dated.

6.1. Detrital zircons from the Lower Devonian (Lochkovian) rocks

Two samples were collected on the basal Devonian (Lochkovian) black microconglomerate (Fig. 6d) situated in the northern subunit of the upper recumbent fold (also called Pardailhan nappe).

MO 23

Among the 100 analyses on 100 zircon grains, 4 are discordant (Table 2). Except seven zircon grains that yield Th/U ratio lower than 0.1, most analytical results have higher Th/U ratio. Combined with the CL images, these features of the zircons indicate a magmatic origin for these grains (Fig. 7). Most of the zircon ages cluster between 850 Ma and 436 Ma, with several ages older than 1500 Ma.

The diagram shows one pronounced age peak around 450 Ma, and three subordinate peaks around 590 Ma, 620 Ma, and 750 Ma (Fig. 8).

MO 24

Among the 100 analyses conducted on 100 zircons for sample MO24, 98 are concordant within uncertainties (Table 2). All zircons have Th/U ratios varying from 0.10 to 2.37 (Table 2). Similarly with the MO 23 sample, most of the concordant ages range from 850 Ma to 436 Ma, with two dominant peaks at 620 Ma and 450 Ma, and three subordinate peaks around 590 Ma, 620 Ma, and 750 Ma (Fig. 8). Several grains indicate a Paleoproterozoic source around 2000 Ma (Fig. 8).

In this work, two samples of Early Devonian white quartzite were collected in the lower recumbent fold (or Mt-Peyroux nappe). As these rocks consist of well sorted, nearly pure quartz, deposited in a more distal part of the basin than the previous samples (MO23 and MO 24), they will allow us to compare detrital zircons in a sedimentary setting different from that of the microconglomerate.

MO 18

One hundred analyses of 100 zircons were made (Table 2). Among these analyses, 91 are concordant within uncertainties. These ages range from 3249 Ma to 234 Ma. Th/U ratios of all zircons but two are higher than 0.1. Almost all ages vary from 1000 Ma to 416 Ma, with 6 grains older than 1800 Ma (Fig. 8). Two major peaks at 630 Ma and 460 Ma, and two subordinate peaks around 970 Ma and 750 Ma are identified (Fig. 8). It is worth to note that this sample shows a minor difference with the others as five grains (analytical points 25, 51, 65, 68, 72) are younger (such as 234 Ma) than the Early Devonian sedimentary age of the rock, and four grains yield ages comprised between 384 Ma and 332 Ma (Table 2). The CL images of these abnormal grains reveal that analytical spots involved cracks or inclusions, leading to Pb loss and unreliable ages. Thus they have been discarded from the age spectra distribution.

MO 22A

In this sample, 100 zircon grains were selected to conduct 100 analyses and obtain 91 concordant ages. Zircon ages range from 2748 Ma and 435 Ma with 11 zircons older than 1800 Ma, and Th/U ratios vary from 0.04 to 2.90 (Table 2). Except 3 grains, the remaining ones correspond to magmatic zircons. The diagram shows one major group at 1000-435 Ma with two age peaks at 457 Ma and 618 Ma; one subordinate peak around 980 Ma is identified; an unseparated cluster between 795 Ma and 700 Ma is also fixed (Fig. 8). Ages older than 1000 Ma are concentrated around 1980 Ma.

6.2. Detrital zircons from the Carboniferous (Late Visean-Serpukhovian) rocks

Two mature sandstone, with mm-sized quartz grains, were collected on the lower recumbent fold (Fig. 6a)

MO 17

A total of 100 analyses of 100 grains were undertaken and 2 are discordant (Table 3). Ninety-eight zircons yield ages ranging from 2879 Ma to 328 Ma, with Th/U ratios from 0.12 to 1.44, except 3 between 0.02 and 0.06. More than 80% analytical results are situated between 760-330 Ma with four major groups of Phanerozoic ages: 350 Ma, 470 Ma, 580 Ma, and 630 Ma (Fig. 9). In this sample, 14 zircon grains are older than 1500 Ma with a cluster around 2700 Ma.

13 FR 52

One hundred analyses of 100 zircon grains have been conducted, and only 3 zircon ages are discordant (Table 3). All but one zircon (13FR52-02) show magmatic features with Th/U ratio > 0.1. The concordant ages range from 2682 Ma to 319 Ma; around 15% analytical result indicated the ages more than 1000 Ma with a small peak around 2100 Ma (Fig. 9). In fact, most of concordant ages range from 680 Ma and 320 Ma with two dominant peaks at 490 Ma and 350 Ma, and two subordinate peaks around 540 Ma and 610 Ma (Fig. 9).

Three mature sandstones were analyzed from the autochthonous foreland basin (Fig. 6b).

MO 15

In this sample, we analyzed 100 spots of 100 zircon grains, among which 6 ages are discordant (Table 3). Except 3 grains, Th/U ratios of all zircons are higher than 0.1. Similar to the 13FR52, 16 zircons are older than 1500 Ma with a cluster around 2100 Ma. Most zircons yield ages range from 670 Ma and 320 Ma with three dominant peaks at 542 Ma, 489 Ma, and 340 Ma (Fig. 9). The youngest zircon age is 315 Ma.

MO 16

Among the 100 analyses on 100 zircon grains, 90 are concordant ages within uncertainties (Table 3). Two grains yield Th/U ratio lower than 0.1. 67 zircons are grouped between 680 Ma and 330 Ma, and a small group at 2150-1800 Ma with two peaks around 1890 Ma and 2140 Ma also exists (Table 3 and Fig. 9). The diagram shows one conspicuous age peak at 452 Ma, and four subordinate peaks at 352 Ma, 504 Ma, 571 Ma, and 616 Ma, respectively (Fig. 9).

MO 26

One hundred spots on 100 zircons were analyzed, and 89 yield concordant ages within uncertainties. Th/U ratios of all zircons but one are higher than 0.1 (Table 3). The concordant ages range from 2966 Ma to 325 Ma; nearly 30% of the analytical result indicated ages older than 1000 Ma, and a cluster at 2060-1940 Ma with a peak around 2053 Ma. This sample contains the largest number of Archean or Proterozoic ages (Table 3 and Fig. 9). In fact, most zircons yield ages <700 Ma with two dominant peaks at 496 Ma and 352 Ma, and two subordinate peaks around 559 Ma and 586 Ma (Fig. 9).

6.3. Synthetic view of inherited zircons

The four Devonian samples yield similar age distribution spectra (Fig. 8). The main peak of inherited grains ranges between 460 and 445 Ma (Ordovician) with a peak around 450 Ma (Fig. 10a). A secondary maximum appears at 628-551 Ma (Cryogenian-Ediacaran) with a peak around 620 Ma (Fig. 10a). Furthermore, several minor secondary peaks represented by a few grains indicate a Paleoproterozoic to Neoproterozoic cluster between 2000 Ma (samples MO 18 and MO 24), 1980 Ma (sample MO 22A and MO 23), and 750 Ma (Fig. 10a). Finally, single isolated grains yield Neoproterozoic ages (ca 2500 Ma to 3200 Ma) with a small peak around 2700 Ma (sample MO 18; Fig. 10a). It is worth to note that eo-Variscan zircon grains, i.e. slightly younger than 415 Ma, are relatively rare. This can be explained by the fact that analytic spots focus on zircon core rather than rims.

The five Late Visean to Early Serpukhovian sandstone samples exhibit comparable detrital zircon age distribution patterns whatever their structural position whether in the foreland basin or in the recumbent fold (Fig. 11). A significant peak corresponds to Early Carboniferous ages around 352 Ma to 340 Ma (Fig. 9) with a maximum around 350 Ma (Fig. 10b). All these 5 samples even have ages as young as Visean at 340 Ma. The main peak yields Early Paleozoic ages at 490 to 452 Ma with a statistical peak around 485 Ma (Fig. 10b). Three Neoproterozoic peaks around 620 Ma, 580 Ma, and 560 Ma are also represented. On the contrary, Paleoproterozoic ages cluster around 2000 Ma (Fig. 10b). Similar with the analytical results of Devonian samples, single isolated grains yield Neoproterozoic ages (ca 2500 Ma to 3200 Ma) with a small statistical peak around 2700 Ma (Fig. 10b). Furthermore, Middle Devonian to Silurian ages, i.e. 440 Ma to 380 Ma, are quite rare: 2 grains in sample MO 15, 1 grain in sample MO 16, 2 grains in sample MO 17, and 3 grains in sample MO 26.

Whatever their structural position, all the samples show two significant peaks around 350 Ma and 450 Ma or 480 Ma (Fig. 11). Concerning the Ediacaran ages, the samples (MO 15, MO 16, MO 26) from the foreland basin show a peak around 559 Ma that is shifted to 585 Ma in the recumbent fold (MO 17, 13 Fr 52, Fig. 11). The Paleoproterozoic to Archean zircons recovered from the foreland basin define a significant cluster around 2000 Ma; on the contrary, a small peak around 2700 Ma is shown in the population from the recumbent fold. The difference in the Precambrian age results suggests that the source that supplied the zircons may have changed slightly from the foreland basin to

the recumbent fold. Furthermore, it is worth to note that such Precambrian rocks are presently not exposed in the Massif Central.

7. Discussion

The zircon age distribution spectra displayed by the Early Devonian and Late Viséan-Serpukhovian terrigenous rocks of the Montagne Noire recumbent folds and foreland basin are similar (Fig. 11). According to the sedimentological data suggest a northern source, i.e. from the already deformed and metamorphosed part of the inner part of the Massif Central. In the following, the possible provenance for the pre-Devonian zircons will be discussed together for Devonian and Carboniferous rocks. Then the case of the Late Devonian to Early Carboniferous zircons will be examined separately.

7.1. Ordovician ages

All the analyzed samples dominantly rework Ordovician zircons ranging between 490 and 445 Ma with statistical peaks around 450 Ma and 480 Ma (Fig. 10). The Ordovician magmatism is well documented in the Variscan belt, where it is interpreted as a consequence of the rifting event that separated several continental stripes, such as Armorica, Mid-German Crystalline Rise, and Avalonia from the northern part of Gondwana (e.g. Matte, 2001; Martínez Catalán et al., 2004, 2009; Faure et al., 2005; Ballèvre et al., 2009). In the French Massif Central, the Ordovician magmatism is mainly represented by alkaline porphyritic granite now transformed into augen orthogneiss. These rocks were probably still buried when the Early Devonian and Carboniferous detritus were deposited in the southern part of the Montagne Noire, however, Ordovician lava and volcanic-sedimentary rocks crop out in the Para-autochthonous Unit, Lower Gneiss Unit and Upper Gneiss Unit (e.g. Pin and Marini, 1993; Alabouvette et al., 2003; Faure et al., 2009). These formations are the most likely potential source rocks that supplied the detrital zircons. A small difference appears between the microconglomerate (MO 23, 24), and the black sandstone (MO 18 and MO 22A) samples. The older

has a zircon peak around 450 Ma, and the younger around 460 Ma (Fig. 8). However, given the error bars of the analysis, the difference between these two peaks is not significant. Moreover, the Late Viséan-Serpukhovian samples exhibit a prominent statistical peak around 480 Ma (Fig. 9 and 10). The reasons for these differences might be due to a change in the zircon source between the Devonian and the Carboniferous.

7.2. Neoproterozoic-Early Cambrian ages

Most of the samples yield Neoproterozoic ages with population peaks at 620 Ma, 590 Ma and 560 Ma (Figs. 8, 9, and 10), and the early Devonian sedimentary rocks show a smaller peak around 980 Ma, and 750 Ma (Fig. 10). It is often argued that the magmatic rocks emplaced during the Ediacaran Cadomian orogeny (650 - 550 Ma), developed along on the margin of the Gondwana continent, and supplied the late Precambrian zircons. Such a possibility cannot be ruled out (Fig. 12). However, it is worth to note that in contrast to the Massif Armoricain, in the FMC, evidence for an Early Cambrian unconformity supporting a Cadomian orogeny is absent, although Neoproterozoic sedimentary and magmatic rocks do exist in the FMC. Indeed, Neoproterozoic-Cambrian magmatic rocks are recognized in most of the litho-tectonic units of the FMC. For instance, Early Cambrian acidic volcanites, known as "porphyroids" crop out in the Cévennes, Albigeois, Rouergue, Limousin. Also, ca 560 Ma diorite and quartz diorite plutons intrude the grauwacke series belonging to the Lower Gneiss Unit in the Lot series (Fig 1; Pin and Lancelot, 1978), the Cévennes Para-autochthonous Unit (Caron, 1994) or the UGU and LGU in the Rouergue area (Lafon, 1986; Lévêque, 1990). Thus several source rocks for the Tonian-Cryogenian-Ediacaran-Early Cambrian detrital zircons can be speculated in the litho-tectonic units exposed north of the Montagne Noire. Presently there are no exposures of 980 Ma, 750 Ma and 620 Ma rocks in the FMC. One possibility is that these zircons were already present in Cambrian or Ordovician detrital rocks that form the host-rocks of the magmatic rocks. In such a case, the primary source for the Neoproterozoic-Early

Cambrian ages would be located in the Gondwana, more to the South than the MCF, and transported to the North by the river drainage network (Fig 12).

7.3. Paleoproterozoic and Neoarchean

In spite of absence of outcrop exposing such old rocks in the FMC, Precambrian inherited zircons are frequently found, but always with a small number of grains, as xenocrysts, in Early Paleozoic magmatic rocks (Cocherie et al., 2005; Lafon, 1986; Alexandrov, 2000; Melleton et al., 2010). A 2000 Ma age cluster is indicated in all the samples (Figs 8, 9). On the contrary, a small peak around 2700 Ma is exhibited in the Late Viséan-Serpukhovian samples. Thus, in the Montagne Noire terrigenous rocks, these grains were possibly supplied by the erosion of Early Paleozoic magmatic rocks or sedimentary formations that already contained different Paleoproterozoic and Neoarchean age populations. If those zircons were supplied by the erosion of Neoproterozoic, Cambrian or Ordovician magmatic rocks, the Paleoproterozoic and Neoarchean zircon record is an indirect evidence for a Paleoproterozoic, and even Archean, basement underneath the Variscan belt.

7.4. Late Devonian to Early Carboniferous

The Late Viséan-Serpukhovian turbidite yields also Famennian-Tournaisian detrital zircons. Metamorphic and magmatic rocks of this age are well known in the Lower Gneiss Unit. Biotite-garnet-staurolite gneiss are well developed in the Lower Gneiss Unit where they yield monazite U-Th-Pb ages around 365-350 Ma (Melleton et al., 2009; Do Couto et al., 2015), but metamorphic zircon ages have not been measured in these rocks. 355-350 Ma magmatic rocks, well exposed in the NW part of the FMC, correspond to the emplacement age of the biotite $\pm$ cordierite Guéret granite (Fig 1; Cartannaz et al., 2007). These rocks are suitable sources for the Montagne Noire detrital zircons since they were already exhumed in Tournaisian-Early Viséan, as documented by the fossiliferous sandstone

and limestone series that overlies the Guéret massif (Mamet et al., 1970). Furthermore, mafic and felsic rocks belonging to the Brévenne ophiolitic series of Eastern Massif Central yielding ca 366±5 Ma ages are also possible source rocks (Fig. 1; Pin and Paquette, 1998).

Lastly, 345 to 335 Ma (Early and Middle Visean) magmatic rocks crop out in the NE part of the FMC, namely Montagne Bourbonnaise and Morvan areas (Fig. 1). There, several sedimentary and volcanic series dated of Tournaisian, Early and Middle Devonian by foraminifera and corals in limestone, and plants debris in terrigenous formations, are covered by the Late Visean "Tufts Anthracifères" (Peyrel and Didier, 1983; Duthou et al., 1984; Leistel and Gagny, 1984; Binon and Pin, 1989; Delfour, 1989; Pin and Duthou, 1990; Pin, 1991; Leloix et al., 1999; Faure et al., 2002; Fig 13). The various volcanic rocks, such as rhyolite, dacite, trachyte, and basaltic lava flows, pyroclastites, volcanic breccias and grauwackes are potential sources for the detrital zircons recovered in the Montagne Noire turbidite.

The NE Massif Central and Montagne Noire are presently separated by ca 250 km where Tournaisian-Visean rocks are presently lacking. However such a rocks might have been exposed there and eroded to supply the material recovered in the Montagne Noire foreland basin. Contemporaneous plutonic rocks are also reported in the Montagne Bourbonnaise (Fig. 13), particularly the biotite-K-feldspar (±hornblende) Bois Noirs and Mayet-de-Montagne massifs dated at 328±6, and 328±4 Ma, respectively (Binon and Pin, 1989). Nevertheless, it is not settled yet if plutons contemporaneous to these ones were already exposed in Late Visean.

Furthermore, the eo-Variscan rocks, either HP/LT metamorphic rocks or HT/LP gneiss and migmatites with ages ranging from 440 to 400 Ma, and 385-375 Ma, respectively are rare in the sedimentary record, both in Early Devonian and Carboniferous terrigenous rocks. A possible interpretation of this phenomenon is that the eo-Variscan deep seated metamorphic rocks were not already exposed to the surface in the Devonian or Late Variscan to Early Serpukhovian. Moreover, this scarcity may also result of selective sampling of the analyzed grains as large magmatic zircons were preferentially chosen instead of the small metamorphic rims. In a future work, detail analyses

should be done to investigate the recrystallization rims around zircon in order to reveal the eo-Variscan magmatic and metamorphic events.

On the basis on our results, a Viséan reconstruction of the paleotopography of the Massif Central, showing the possible sources and drainage patterns, is proposed in Fig. 14. Moreover, as discussed above, it must not be forgotten that a part of the detrital zircon grains enclosed in the Devonian and Carboniferous sandstones may have experienced multiple reworking and recycling, as already documented for the magmatic rocks (Alexandrov, 2000; Cocherie et al., 2005; Ducassou et al., 2014; Faure et al., 2010; Melleton et al., 2010). Thus, the search for a source to the North of the Massif Central is not the only possibility. Particularly, the Proterozoic and Archean grains might have been eroded and deposited several times in the Early Paleozoic sedimentary rocks or scavenged by the magmas before their final depositions.

8. Conclusion

This first study of the detrital zircons deposited in the Early Devonian and the Viséan-Serpukhovian detrital rocks of the Montagne Noire area shows that a wide range of detrital zircons were supplied from the northern inner part of the Variscan belt of the FMC. The zircon grains from all of the samples yielded U-Pb age spectra ranging from Neoproterozoic to Late Paleozoic with several age population peaks at 2700 Ma, 2000 Ma, 980 Ma, 750 Ma, 620 Ma, 590 Ma, 560 Ma, 480 Ma, 450 Ma, and 350 Ma. The Precambrian grains recorded more complex itinerary and may be experienced a multi-recycling history. The Ordovician magmatism (around 450 Ma) appears as the main component of detrital zircons.

The subordinate ages of detrital zircons were 352-340 Ma with a statistical peak around 350 Ma in the Late Viséan-Early Serpukhovian turbidite complies with the Tournaisian Guéret type granites emplaced at the end of the main Variscan phase, and exhumed in Early Carboniferous. Since Tournaisian magmatic rocks crop out only in the northern part of the FMC, this result complies with

the previous conclusion inferred from sedimentological studies that the drainage pattern was southward directed (Fig. 14). Concerning the provenance of the Early to Middle Visean detritus, a northern source is also inferred on the basis of sedimentology. Presently, magmatic rocks of this age crop out only in the Montagne Bourbonnaise-Morvan area, ca 250 km to the North of the deposition area, suggesting also a south-directed drainage towards the Late Visean-Serpukhovian Variscan foreland basin. Nevertheless, a presently eroded, closer source cannot be ruled out.

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Figure Captions

- Fig. 1. Structural map of the Variscan French Massif Central (modified from Faure et al., 2009).
- Fig. 2. Structural map of the Montagne Noire with location of the dated detrital zircons samples.
- Fig. 3. Lithostratigraphic log of the Paleozoic series cropping out in the Montagne Noire (modified from Arthaud, 1970; Alvaro and Vizcaïno, 1998; and Vizcaïno and Alvaro, 2001).
- Fig. 4. Field picture of Devonian quartzite and Carboniferous turbidite. (a). Devonian unconformity overlying Early Ordovician sandstone (due to the Carboniferous tectonics, the unconformity is upside down); (b). Early Devonian massive white quartzite (Mur quartzite), sample MO 18; (c). Visean-Serpukhovian turbidite with intraformational matrix-supported conglomerate; (d). General view of the Visean-Serpukhovian turbidite; (e). Close-up of D showing intraformational conglomerate with white quartz, radiolarian chert, and black siltite clasts (sample MO 17).
- Fig. 5. Schematic cross section of Montagne Noire with sample location; italics: Devonian sandstone, plain: Visean-Serpukhovian sandstone. (Modified from Faure et al., 2014).

Fig. 6. Microscope thin sections representative of dated rocks. Late Viséan-Serpukhovian rocks, (a). Fine grained sandstone (13FR 52), (b). Coarse grained sandstone (MO 15) with detrital muscovite. Early Devonian rocks, (c). White quartzite with detrital zircon (MO 18), (d). Black microconglomerate (MO 24).

Fig. 7. Representative cathodoluminescence (CL) images of selected detrital zircons with a wide range in size and morphology. Most of the analyzed grains exhibit an inherited core surrounded by several recrystallization rims. The circles represent U-Pb analytical sites; Analytical numbers and ages presented below; the scale length is 100 μm .

Fig. 8. Cumulative probability plots of detrital zircon U-Pb ages in Early Devonian sandstone, see Figs 2 and 5, and Table 1 for location.

Fig. 9. Cumulative probability plots of detrital zircon U-Pb ages in Late Viséan-Early Serpukhovian sandstone, see Figs 2 and 5, and Table 1 for location.

Fig. 10 Synthetic and comparison of the cumulative probability plots of detrital zircon U-Pb ages from the (a). Early Devonian sandstone, (b). Late Viséan-Early Serpukhovian sandstone, and (c). Histograms of all the concordant detrital zircon ages obtained in this study.

Fig. 11. Synthetic cumulative probability plots of detrital zircon U-Pb ages from the Carboniferous autochthonous foreland basin and the Carboniferous and Devonian from the recumbent folds.

Fig. 12. Schematic paleogeographic map of the main continents at 550 Ma - 490 Ma showing the situation of the French Massif Central (FMC) in the northern margin of Gondwana, and the Avalonia, Mid-German Crystalline Rise (MGCR) and Armorica microcontinents separated from Gondwana in Early Ordovician. Arrows indicate the possible source areas for the detrital zircons. In the Neoproterozoic-Early Cambrian, both northern (from the Cadomian belt), and southern (from the West African craton) sources are possible. In Ordovician, due to the rifting, only a southern (i.e.

Gondwanian) source was allowed. Note that after the Eovariscan tectonics, responsible for the rewelding of Armorica with Gondwana, the northern source was again possible (modified from Matte, 2001).

Fig. 13. Schematic geological map and lithostratigraphic logs of Devonian-Visean series recognized in NE Massif Central (modified from Leistel and Gagny, 1984; Binon and Pin, 1989; Delfour, 1989; Leloix et al., 1999). Ages of Visean plutons are from Binon and Pin (1989) for zircon ages, and A. Cocherie (personal communication) for monazite. Zr: zircon, mz: monazite. In the map, due to their limited extension, the middle Visean series (V2) have been grouped with the early Visean (V1) ones. The late Visean (V3) "Tufs Anthracifères" series unconformably covers all previous series.

Fig. 14. Schematic topographic reconstruction of the French Massif Central during the Visean and the possible sources for the detrital zircons of the Foreland basin.

Table 1. Summary of samples from the foreland basin of the Variscan Southern Massif Central in Montagne Noire

Table 2. Analytical data for the dated Devonian zircons: MO 18, MO 22A, MO 23, MO 24.

Table 3. Analytical data for the dated Carboniferous zircons: 13 FR 52, MO 15, MO 16, MO 17, MO 26.

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Table 1 Summary of samples from the foreland basin of the Variscan Southern Massif Central in Montagne Noire

Stratigraphic Age	Sample n°	GPS location	Petrography	Tectonic position
Serpukhovian	MO 15	43° 32' 24.41"	Sandstone	Autochthonous
	Cabrerolles	03° 07' 47.30"		
	MO16	43° 31' 55.33"	Sandstone	Autochthonous
to	Lenthéric	03° 08' 58.50"		
	MO 26	43° 31' 38.54"	Sandstone	Autochthonous
	Roquebrun	03° 02' 19.52"		
Visean	MO 17	43° 29' 54.72"	Microconglomerate	Lower recumbent fold
	Barrac	03° 06' 57.02"		(Mt-Peyroux)
	13 FR 52	43° 28' 37.18"	Sandstone	Lower recumbent fold
	Landeyran	03° 04' 03.63"		(Mt-Peyroux)
Devonian	MO 18	43° 28' 56.58"	Quartzite	Lower recumbent fold
	Landeyran	03° 03' 51.42"		(Mt-Peyroux)
	MO 22A	43° 29' 58.8"	Quartzite	Lower recumbent fold
	Roquebrun	03° 02' 56.4"		(Mt-Peyroux)
	MO 23	43° 32' 31.70"	Microconglomerate	Upper recumbent fold
	Malviès	02° 55' 50.03"		(Pardailhan)
	MO 24	43°32' 43.58"	Microconglomerate	Upper recumbent fold
	Fenouillède	02° 56' 24.13"		(Pardailhan)

Table 2. Analytical data for the dated Devonian zircons: MO 18, MO 22A, MO 23, MO 24.

Spot No.	Th (ppm)	U (ppm)	Th/U	Ratios						Ages (Ma)						Discor- dance (%)	Best Age	$\pm 1\sigma$
				207Pb/206Pb	$\pm 1\sigma$	207Pb/235U	$\pm 1\sigma$	206Pb/238U	$\pm 1\sigma$	207Pb/206Pb	$\pm 1\sigma$	207Pb/235U	$\pm 1\sigma$	206Pb/238U	$\pm 1\sigma$			
MO18-01	88	31	0.28	0.06135	0.00134	0.09833	0.00192	0.83218	0.00665	652	19	605	11	615	9	1.65%	605	11
MO18-02	123	229	0.54	0.07501	0.00206	0.08036	0.00172	0.83144	0.0054	875	20	494	11	568	23	14.98%		
MO18-03	136	361	0.38	0.06669	0.00128	0.12615	0.00240	1.16056	0.0024	724	85	763	14	753	18	-1.31%	763	14
MO18-04	97	989	0.99	0.07417	0.00212	0.16291	0.00365	1.6666	0.00363	1046	24	973	20	996	17	2.36%	973	20
MO18-05	41	114	0.36	0.05830	0.00270	0.07652	0.00200	0.61538	0.00626	541	50	475	12	487	17	2.53%	475	12
MO18-06	102	163	0.62	0.06259	0.00199	0.09094	0.00201	0.78516	0.00294	694	29	561	12	588	13	4.81%	561	12
MO18-07	127	372	0.34	0.05942	0.00127	0.09600	0.00185	0.78690	0.00534	583	19	591	11	589	9	-0.34%	591	11
MO18-08	122	185	0.66	0.06256	0.00166	0.10435	0.00218	0.90048	0.00190	693	23	640	13	652	12	1.88%	640	13
MO18-09	64	192	0.34	0.05551	0.00195	0.07224	0.00163	0.55312	0.00790	433	35	450	10	447	12	-0.67%	450	10
MO18-10	57	203	0.28	0.05976	0.00184	0.07564	0.00164	0.62353	0.00760	595	28	470	10	492	11	4.68%	470	10
MO18-	13	41	0.32	0.07196	0.0047	0.09045	0.0031	0.89772	0.00538	641	239	551	18	569	44	3.27%	551	18

11					0		0		4											
M O1 8- 12	1 3 2	1 9 6	0. 6 8	0.06 253	0. 00 17 5	0.1 017 9	0. 00 21 5	0.8 778 7	0. 02 24 7		692 2 5	625	1 3	640	1 2		2.4 0%	6 2 5	1 3	
M O1 8- 13	4 6	1 6 4	0. 2 8	0.06 480	0. 00 17 8	0.1 128 0	0. 00 24 0	1.0 081 8	0. 02 53 8		768 2 4	689	1 4	708	1 3		2.7 6%	6 8 9	1 4	
M O1 8- 14	8 2	1 1 5	0. 7 1	0.06 964	0. 00 20 9	0.1 350 1	0. 00 30 1	1.2 968 5	0. 03 56 3		918 2 6	816	1 7	844	1 6		3.4 3%	8 1 6	1 7	
M O1 8- 15	6 7	9 0	0. 7 4	0.07 196	0. 00 21 1	0.1 706 6	0. 00 38 3	1.6 940 0	0. 04 56 0		985 2 5	101 6	2 1	100 6	1 7		- 3.0 5%	9 8 5	2 5	
M O1 8- 16	9 1	1 2 6	0. 7 2	0.06 275	0. 00 21 2	0.1 039 6	0. 00 23 7	0.8 998 3	0. 02 79 7		700 3 2	638	1 4	652	1 5		2.1 9%	6 3 8	1 4	
M O1 8- 17	6 6	3 4 6	0. 1 9	0.06 182	0. 00 14 5	0.0 896 6	0. 00 17 9	0.7 644 7	0. 01 63 8		516 8 6	551	1 1	544	1 4		- 1.2 7%	5 5 1	1 1	
M O1 8- 18	8 9	1 8 1	0. 4 9	0.05 810	0. 00 19 5	0.0 712 4	0. 00 15 9	0.5 709 3	0. 01 76 6		534 3 3	444	1 0	459	1 1		3.3 8%	4 4 4	1 0	
M O1 8- 19	2 0	6 5	0. 3 0	0.06 096	0. 00 28 0	0.1 009 8	0. 00 27 1	0.8 489 8	0. 03 58 7		638 4 7	620	1 6	624	2 0		0.6 5%	6 2 0	1 6	
M O1 8- 20	2 4 9	5 1 8	0. 4 8	0.06 790	0. 00 12 5	0.0 984 2	0. 00 18 6	0.9 217 3	0. 01 53 5		866 1 7	605	1 1	663	8		9.5 9%	6 0 5	1 1	
M O1 8- 21	1 9	4 6	0. 4 1	0.06 692	0. 00 34 4	0.1 289 5	0. 00 36 9	1.1 900 5	0. 05 68 9		835 5 4	782	2 1	796	2 6		1.7 9%	7 8 2	2 1	
M O1 8- 22	2 8	5 4	0. 5 3	0.07 168	0. 00 32 3	0.1 049 8	0. 00 29 1	1.0 378 2	0. 04 25 3		977 4 2	644	1 7	723	2 1		12. 27 %			
M O1 8- 23	1 4 6	1 5 9	0. 9 2	0.07 909	0. 00 21 3	0.1 037 8	0. 00 22 4	1.1 320 2	0. 02 75 2		820 1 6 1	627	1 4	670	3 5		6.8 6%	6 2 7	1 4	
M O1 8- 24	5 7	1 2 1	0. 4 7	0.05 604	0. 00 23 7	0.0 731 4	0. 00 18 2	0.5 653 1	0. 02 19 9		454 4 5	455	1 1	455	1 4		0.0 0%	4 5 5	1 1	
M	9	6	0.	0.06	0.	0.0	0.	0.3	0.		293	1	234	5	239	8		2.1	2	5

O1 8- 25	0	9 0	1 3	744	00 15 9	376 8	00 07 6	504 5	00 74 4			0 0					4%	3 4		
M O1 8- 26	9 1	1 4 3	0. 6 4	0.08 902	0. 00 25 4	0.1 090 4	0. 00 24 7	1.3 387 3	0. 03 41 9		781	1 6 0	648	1 5	678	3 4		4.6 3%	6 4 8	1 5
M O1 8- 27	1 7 9	3 0 5	0. 5 9	0.05 580	0. 00 15 3	0.0 739 9	0. 00 15 3	0.5 694 2	0. 01 43 7		444	2 5	460	9	458	9		- 0.4 3%	4 6 0	9
M O1 8- 28	7 2	2 4 7	0. 2 9	0.06 614	0. 00 15 8	0.0 905 2	0. 00 18 3	0.8 257 1	0. 01 79 5		537	1 0 0	553	1 1	550	1 7		- 0.5 4%	5 5 3	1 1
M O1 8- 29	1 7 3	2 0 8	0. 8 3	0.06 522	0. 00 16 7	0.1 072 7	0. 00 22 3	0.9 648 8	0. 02 26 1		781	2 2	657	1 3	686	1 2		4.4 1%	6 5 7	1 3
M O1 8- 30	1 2 9	5 5 9	0. 2 3	0.06 566	0. 00 23 8	0.0 529 7	0. 00 12 5	0.4 796 5	0. 01 57 9		796	3 3	333	8	398	1 1		19. 52 %		
M O1 8- 31	2 0 3	2 6 2	0. 7 8	0.06 207	0. 00 14 0	0.1 118 9	0. 00 22 3	0.9 578 6	0. 01 98 1		677	2 0	684	1 3	682	1 0		- 0.2 9%	6 8 4	1 3
M O1 8- 32	2 8 1	2 3 2	1. 2 1	0.05 910	0. 00 15 7	0.0 981 6	0. 00 20 3	0.8 000 3	0. 01 95 0		571	2 4	604	1 2	597	1 1		- 1.1 6%	6 0 4	1 2
M O1 8- 33	5 7	4 9	1. 1 7	0.17 844	0. 00 32 0	0.5 016 5	0. 01 09 8	12. 344 95	0. 21 04 5		263 8	1 7	262 1	4 7	263 1	1 6		0.6 5%	2 6 3 8	1 7
M O1 8- 34	8 3	8 3	1. 0 0	0.07 439	0. 00 22 7	0.1 639 9	0. 00 37 7	1.6 823 0	0. 04 71 7		105 2	2 6	979	2 1	100 2	1 8		2.3 5%	9 7 9	2 1
M O1 8- 35	1 0 6	1 9 2	0. 5 5	0.06 292	0. 00 16 7	0.1 265 2	0. 00 26 6	1.0 978 1	0. 02 68 2		706	2 3	768	1 5	752	1 3		- 2.0 8%	7 6 8	1 5
M O1 8- 36	1 2 3	9 5	1. 2 9	0.05 769	0. 00 25 5	0.0 960 8	0. 00 24 6	0.7 643 8	0. 03 13 7		518	4 8	591	1 4	577	1 8		- 2.3 7%	5 9 1	1 4
M O1 8- 37	7 3	9 1	0. 8 1	0.12 331	0. 00 21 3	0.3 585 8	0. 00 72 8	6.0 977 2	0. 09 75 4		200 5	1 7	197 5	3 5	199 0	1 4		1.5 2%	2 0 0 5	1 7
M O1 8- 9	1 0 9	1 4 4	0. 7 6	0.08 152	0. 00 26	0.0 937 7	0. 00 22	1.0 542 4	0. 03 06		678	1 8 6	564	1 4	587	3 6		4.0 8%	5 6 4	1 4

38					4		0		8									
M O1 8- 39	1 5 1	9 0 3	0. 1 7	0.19 693	0. 00 48 5	0.0 315 5	0. 00 07 3	0.8 568 5	0. 01 66 1		154 5	1 4 6	173	5	312	1 9	80. 35 %	
M O1 8- 40	7 9	1 0 9	0. 7 3	0.06 008	0. 00 22 3	0.0 977 2	0. 00 23 3	0.8 096 2	0. 02 76 8		606	3 6	601	1 4	602	1 6	0.1 7%	6 0 1
M O1 8- 41	1 0 9	1 0 9	1. 0 1	0.12 042	0. 00 21 0	0.3 514 9	0. 00 71 5	5.8 364 0	0. 09 43 1		196 2	1 7	194 2	3 4	195 2	1 4	1.0 3%	1 9 6 2
M O1 8- 42	1 2 6	5 2 4	0. 2 4	0.06 885	0. 00 14 2	0.0 755 9	0. 00 14 7	0.7 176 2	0. 01 33 9		567 7	8 7	464	9	482	1 3	3.8 8%	4 6 4
M O1 8- 43	4 8	1 7 3	0. 2 8	0.07 474	0. 00 23 7	0.0 778 7	0. 00 17 9	0.8 024 9	0. 02 29 0		491 2	1 4	473	1 1	476	2 2	0.6 3%	4 7 3
M O1 8- 44	1 0 3	3 3 0	0. 3 1	0.05 649	0. 00 16 1	0.0 720 3	0. 00 15 2	0.5 610 6	0. 01 46 6		472 6	2 6	448	9	452	1 0	0.8 9%	4 4 8
M O1 8- 45	1 9	3 1	0. 6 1	0.06 122	0. 00 45 9	0.1 200 9	0. 00 42 0	1.0 137 5	0. 07 17 0		647 3	9 3	731	2 4	711	3 6	- 2.7 4%	7 3 1
M O1 8- 46	8 6	1 6 2	0. 5 3	0.07 695	0. 00 17 8	0.1 664 7	0. 00 34 7	1.7 663 4	0. 03 72 5		112 0	1 9	993	1 9	103 3	1 4	4.0 3%	9 9 3
M O1 8- 47	1 5 0	3 1 6	0. 4 7	0.05 471	0. 00 14 5	0.0 740 1	0. 00 15 2	0.5 583 6	0. 01 36 5		400 5	2 5	460	9	450	9	- 2.1 7%	4 6 0
M O1 8- 48	7 2	1 3 0	0. 5 5	0.07 242	0. 00 21 3	0.1 717 2	0. 00 39 4	1.7 148 6	0. 04 63 1		998 5	2 5	102 2	2 2	101 4	1 7	- 2.3 5%	9 9 8
M O1 8- 49	8 2	1 4 6	0. 5 6	0.07 600	0. 00 25 1	0.1 013 6	0. 00 23 7	1.0 622 1	0. 03 18 5		109 5	2 8	622	1 4	735	1 6	18. 17 %	
M O1 8- 50	1 3 8	1 4 1	0. 9 8	0.06 214	0. 00 22 2	0.1 040 3	0. 00 24 5	0.8 913 5	0. 02 93 5		679 4	3 4	638	1 4	647	1 6	1.4 1%	6 3 8
M O1 8- 51	2 3	3 6 1	0. 0 6	0.05 937	0. 00 19 1	0.0 536 7	0. 00 11 9	0.4 394 0	0. 01 29 0		453 3	9 3	336	7	351	1 0	4.4 6%	3 3 6
M	1	8	1.	0.05	0.	0.1	0.	0.8	0.		600	4	662	1	648	1	-	6

O1 8- 52	0 3	5	2 0	991	00 25 9	081 0	00 28 1	930 1	03 56 3		4		6		9		2.1 1%	6 2	6
M O1 8- 53	8 9	2 3 1	0. 3 9	0.06 300	0. 00 20 3	0.0 740 5	0. 00 16 7	0.6 433 0	0. 01 88 7		708	2 9	461 0	1 504	1 2		9.3 3%	4 6 1	1 0
M O1 8- 54	8 4	2 5 6	0. 3 3	0.05 749	0. 00 17 1	0.0 858 8	0. 00 18 5	0.6 808 2	0. 01 86 7		510	2 8	531 1	1 527	1 1		- 0.7 5%	5 3 1	1 1
M O1 8- 55	1 2 4	1 2 1	1. 0 3	0.07 210	0. 00 20 1	0.1 593 3	0. 00 35 3	1.5 838 3	0. 04 05 5		989	2 3	953 0	2 964	1 6		1.1 5%	9 5 3	2 0
M O1 8- 56	9 1	2 3 7	0. 3 8	0.06 646	0. 00 31 0	0.0 767 5	0. 00 21 2	0.7 032 8	0. 02 98 9		624	1 7 9	473 3	1 500	3 0		5.7 1%	4 7 3	1 3
M O1 8- 57	7 7	1 3 3	0. 5 8	0.04 974	0. 00 64 6	0.0 761 9	0. 00 39 4	0.5 225 1	0. 06 40 0		183	1 8 0	473 0	2 427	4 3		- 9.7 3%	4 7 3	2 4
M O1 8- 58	9 7	1 8 9	0. 5 1	0.06 120	0. 00 19 5	0.1 063 8	0. 00 23 7	0.8 976 0	0. 02 63 6		646	3 0	652 4	1 650	1 4		- 0.3 1%	6 5 2	1 4
M O1 8- 59	5 7	3 5 3	0. 1 6	0.06 607	0. 00 15 0	0.1 225 0	0. 00 24 7	1.1 159 3	0. 02 33 0		809	2 0	745 4	1 761	1 1		2.1 5%	7 4 5	1 4
M O1 8- 60	4 3	1 8 4	0. 2 3	0.05 896	0. 00 19 3	0.1 036 8	0. 00 23 3	0.8 428 0	0. 02 55 0		566	3 1	636 4	1 621	1 4		- 2.3 6%	6 3 6	1 4
M O1 8- 61	6 6	2 1 0	0. 3 1	0.05 809	0. 00 19 6	0.0 720 8	0. 00 16 4	0.5 772 1	0. 01 78 4		533	3 2	449 0	1 463	1 1		3.1 2%	4 4 9	1 0
M O1 8- 62	3 3	7 8	0. 4 2	0.06 003	0. 00 43 7	0.1 403 5	0. 00 45 5	1.1 616 1	0. 08 06 0		605	9 5	847 6	2 783	3 8		- 7.5 6%	8 4 7	2 6
M O1 8- 63	1 5 4	2 2 9	0. 6 7	0.05 658	0. 00 27 1	0.0 947 3	0. 00 24 4	0.7 389 9	0. 03 31 9		475	5 5	583 4	1 562	1 9		- 3.6 0%	5 8 3	1 4
M O1 8- 64	2 5	1 5	1. 5 9	0.05 785	0. 01 22 8	0.1 224 6	0. 00 89 6	0.9 765 6	0. 19 89 6		524	3 2 2	745 1	5 692	1 0 2		- 7.1 1%	7 4 5	5 1
M O1 8-	4 4	1 8 8	0. 2 4	0.05 875	0. 00 34	0.0 600 8	0. 00 17	0.4 866 3	0. 02 64		558	6 9	376 1	1 403	1 8		7.1 8%	3 7 6	1 1

65					3		6		2											
M O1 8- 66	2 2 2	4 0 2	0. 0 5	0.06 368	0. 00 17 7	0.1 123 1	0. 00 24 0	0.9 859 9	0. 02 51 5		731	2 4	686	1 4	697	1 3		1.6 0%	6 8 6	1 4
M O1 8- 67	1 0 5	2 1 0	0. 5 0	0.05 814	0. 00 17 4	0.0 686 5	0. 00 14 7	0.5 501 7	0. 01 51 7		535	2 8	428	9	445	1 0		3.9 7%	4 2 8	9
M O1 8- 68	4 3 5	3 3 3	0. 1 3	0.05 746	0. 00 15 3	0.0 614 5	0. 00 12 7	0.4 867 9	0. 01 18 7		509	2 4	384	8	403	8		4.9 5%	3 8 4	8
M O1 8- 69	1 6 8	1 7 3	0. 9 7	0.06 008	0. 00 17 3	0.0 856 7	0. 00 18 5	0.7 095 6	0. 01 87 5		606	2 6	530	1 1	544	1 1		2.6 4%	5 3 0	1 1
M O1 8- 70	6 6 2	1 8 6	0. 3 6	0.05 535	0. 00 18 7	0.0 716 3	0. 00 16 1	0.5 465 8	0. 01 70 5		426	3 4	446	1 0	443	1 1		- 0.6 7%	4 4 6	1 0
M O1 8- 71	8 4 9	1 9 9	0. 4 2	0.06 705	0. 00 15 6	0.1 211 9	0. 00 24 9	1.1 200 5	0. 02 38 2		839	2 0	737	1 4	763	1 1		3.5 3%	7 3 7	1 4
M O1 8- 72	5 7 4	1 2 4	0. 4 5	0.05 340	0. 00 29 4	0.0 528 0	0. 00 14 3	0.3 886 7	0. 02 00 5		346	6 9	332	9	333	1 5		0.3 0%	3 3 2	9
M O1 8- 73	3 9 0	1 1 5	0. 3 5	0.05 735	0. 00 24 4	0.0 703 2	0. 00 17 4	0.5 559 1	0. 02 18 8		505	4 5	438	1 0	449	1 4		2.5 1%	4 3 8	1 0
M O1 8- 74	5 4 5	7 5 2	0. 7 2	0.06 867	0. 00 46 1	0.1 095 7	0. 00 37 0	1.0 371 7	0. 06 48 1		889	7 5	670	2 1	723	3 2		7.9 1%	6 7 0	2 1
M O1 8- 75	6 5 7	1 3 8	0. 4 8	0.07 066	0. 00 17 2	0.1 695 9	0. 00 35 8	1.6 517 2	0. 03 70 0		948	2 1	101 0	2 0	990	1 4		- 6.1 4%	9 4 8	2 1
M O1 8- 76	5 9 3	1 4 1	0. 4 1	0.26 046	0. 00 31 0	0.6 586 2	0. 01 25 9	23. 646 34	0. 27 05 6		324 9	1 6	326 2	4 9	325 4	1 1		- 0.4 0%	3 2 4 9	1 6
M O1 8- 77	2 5 8	2 1 8	1. 1 8	0.06 916	0. 00 14 3	0.1 544 8	0. 00 30 7	1.4 727 5	0. 02 80 7		904	1 8	926	1 7	919	1 2		- 0.7 6%	9 2 6	1 7
M O1 8- 78	5 6 8	3 3 8	0. 1 7	0.06 000	0. 00 14 7	0.0 869 4	0. 00 17 8	0.7 191 1	0. 01 61 6		604	2 2	537	1 1	550	1 0		2.4 2%	5 3 7	1 1
M	1	3	0.	0.07	0.	0.1	0.	1.5	0.		997	1	941	1	958	1		1.8	9	1

O1 8- 79	6 9 5	0 5 6	5 6	238	00 13 3	571 9	00 30 6	682 4	02 64 3		8		7		0	1%	4 1	7
M O1 8- 80	1 2 2	3 9 7	0. 3 1	0.05 677	0. 00 14 2	0.0 701 3	0. 00 14 3	0.5 487 7	0. 01 26 2	483	2 3	437	9	444	8	1.6 0%	4 3 7	9
M O1 8- 81	2 1 1	2 4 3	0. 8 7	0.11 730	0. 00 17 8	0.2 543 7	0. 00 49 3	4.1 128 4	0. 05 70 1	191 5	1 7	146 1	2 5	165 7	1 1	31. 07 %		
M O1 8- 82	3 1 8	2 5 5	1. 2 5	0.06 617	0. 00 16 0	0.1 024 0	0. 00 21 2	0.9 339 5	0. 02 07 1	812	2 1	628	1 2	670	1 1	6.6 9%	6 2 8	1 2
M O1 8- 83	1 1 3	2 1 9	0. 5 2	0.06 132	0. 00 17 3	0.0 956 1	0. 00 20 7	0.8 080 7	0. 02 08 6	650	2 5	589	1 2	601	1 2	2.0 4%	5 8 9	1 2
M O1 8- 84	4 2	7 1 5	0. 0 6	0.11 750	0. 00 13 8	0.2 575 1	0. 00 47 0	4.1 705 8	0. 04 51 1	191 9	1 8	147 7	2 4	166 8	9	29. 93 %		
M O1 8- 85	9 8	9 2	1. 0 7	0.06 391	0. 00 22 8	0.1 402 1	0. 00 33 6	1.2 351 0	0. 04 08 2	739	3 4	846	1 9	817	1 9	- 3.4 3%	8 4 6	1 9
M O1 8- 86	9 3	1 4 8	0. 6 3	0.05 821	0. 00 23 5	0.0 763 0	0. 00 18 8	0.6 121 9	0. 02 27 8	538	4 1	474	1 1	485	1 4	2.3 2%	4 7 4	1 1
M O1 8- 87	7 0	2 8 2	0. 2 5	0.05 839	0. 00 17 6	0.0 666 1	0. 00 14 5	0.5 360 8	0. 01 48 7	544	2 8	416	9	436	1 0	4.8 1%	4 1 6	9
M O1 8- 88	1 6 5	2 5 0	0. 6 6	0.12 209	0. 00 19 8	0.2 321 8	0. 00 45 9	3.9 067 4	0. 05 71 9	153 0	8 7	130 2	2 6	139 1	3 0	17. 51 %		
M O1 8- 89	2 3 0	8 4 7	0. 2 7	0.21 319	0. 00 23 0	0.2 923 7	0. 00 53 1	8.5 906 9	0. 08 48 3	276 1	4 0	160 6	2 7	217 3	1 3	71. 92 %		
M O1 8- 90	4 0	1 0 4	0. 3 8	0.16 789	0. 00 25 8	0.4 872 3	0. 00 99 5	11. 273 86	0. 16 35 9	253 7	1 7	255 9	4 3	254 6	1 4	- 0.8 6%	2 5 3 7	1 7
M O1 8- 91	9 2	3 5 9	0. 2 6	0.17 226	0. 00 21 1	0.3 299 6	0. 00 61 8	7.8 332 7	0. 08 80 1	256 1	4 0	183 4	3 0	220 0	1 2	39. 64 %	2 5 6 1	4 0
M O1 8- 92	1 0 2	1 8 6	0. 5 5	0.05 881	0. 00 19	0.1 016 2	0. 00 23	0.8 235 5	0. 02 49	560	3 1	624	1 4	610	1 4	- 2.2 4%	6 2 4	1 4

92					3		1		9											
M O1 8- 93	1 7 8	1 8 1	0. 9 8	0.17 427	0. 00 22 5	0.4 983 3	0. 00 96 1	11. 968 15	0. 14 62 2		259 9	1 7	260 7	4 1	260 2	1 1		- 0.3 1%	2 5 9 9	1 7
M O1 8- 94	4 1	1 5 8	0. 2 6	0.06 431	0. 00 20 4	0.1 118 9	0. 00 25 4	0.9 916 5	0. 02 88 9		752	2 8	684	1 5	700	1 5		2.3 4%	6 8 4	1 5
M O1 8- 95	6 9	6 6	1. 0 4	0.07 190	0. 00 39 9	0.1 740 0	0. 00 56 5	1.7 240 5	0. 08 85 9		983	5 5	103 4	3 1	101 8	3 3		- 4.9 3%	9 8 3	5 5
M O1 8- 96	1 9 3	3 1 2	0. 6 2	0.06 526	0. 00 15 9	0.0 903 3	0. 00 18 8	0.8 124 5	0. 01 80 5		783	2 1	557	1 1	604	1 0		8.4 4%	5 5 7	1 1
M O1 8- 97	1 2 4	2 3 7	0. 5 2	0.05 973	0. 00 15 6	0.0 993 2	0. 00 20 9	0.8 174 9	0. 01 95 7		594	2 3	610	1 2	607	1 1		- 0.4 9%	6 1 0	1 2
M O1 8- 98	1 1 9	3 5 1	0. 3 4	0.06 827	0. 00 11 6	0.1 646 6	0. 00 31 6	1.5 491 4	0. 02 42 0		877	1 8	983	1 7	950	1 0		- 3.3 6%	9 8 3	1 7
M O1 8- 99	7 8	1 7 6	0. 4 4	0.06 031	0. 00 19 1	0.1 004 5	0. 00 22 7	0.8 348 8	0. 02 44 0		615	2 9	617	1 3	616	1 4		- 0.1 6%	6 1 7	1 3
M O1 8- 10 0	5 0	1 3 7	0. 3 6	0.05 596	0. 00 22 5	0.0 829 3	0. 00 20 1	0.6 396 0	0. 02 39 5		451	4 3	514	1 2	502	1 5		- 2.3 3%	5 1 4	1 2
M O2 2A - 01	7 0	7 9	0. 8 9	0.06 064	0. 00 17 2	0.8 213 0	0. 02 14 0	0.0 982 5	0. 00 16 9		626	2 9	609	1 2	604	1 0		0.8 3%	6 0 4	1 0
M O2 2A - 02	9 1	1 5 3	0. 6 0	0.05 792	0. 00 11 5	0.8 383 8	0. 01 54 4	0.1 050 1	0. 00 14 8		527	1 9	618	9	644	9		- 4.0 4%	6 4 4	9
M O2 2A - 03	3 4	3 5	0. 9 6	0.12 613	0. 00 22 1	6.2 663 9	0. 10 14 0	0.3 604 0	0. 00 58 3		204 5	1 3	201 4	1 4	198 4	2 8		3.0 7%	2 0 4 5	1 3
M O2 2A - 	6 8	8 8	0. 7 7	0.11 994	0. 00 14 0	6.0 474 3	0. 06 66 6	0.3 657 3	0. 00 48 3		195 5	1 1	198 3	1 0	200 9	2 3		- 2.6 9%	1 9 5 5	1 1

04																				
M O2 2A - 05	1 2 9	1 6 6	0. 7 8	0.05 772	0. 00 11 8	0.7 778 0	0. 01 47 0	0.0 977 5	0. 00 13 9		519	2 0	584	8	601	8		- 2.8 3%	6 0 1	8
M O2 2A - 06	8 9	8 8	1. 0 1	0.06 263	0. 00 14 8	1.0 452 3	0. 02 26 8	0.1 210 5	0. 00 18 9		696	2 2	727	1 1	737	1 1		- 1.3 6%	7 3 7	1
M O2 2A - 07	8 5	3 8 9	0. 2 2	0.05 471	0. 00 08 8	0.5 605 6	0. 00 83 6	0.0 743 2	0. 00 09 5		400	1 5	452	5	462	6		- 2.1 6%	4 6 2	6
M O2 2A - 08	6 6	9 1	0. 7 2	0.06 065	0. 00 14 4	1.0 028 2	0. 02 19 9	0.1 199 3	0. 00 18 7		627	2 3	705	1 1	730	1 1		- 3.4 2%	7 3 0	1
M O2 2A - 09	9 2	1 0 5	0. 8 8	0.05 728	0. 00 17 4	0.5 767 9	0. 01 60 3	0.0 730 4	0. 00 12 7		502	3 2	462	1 0	454	8		1.7 6%	4 5 4	8
M O2 2A - 10	5 2	7 0	0. 7 5	0.06 146	0. 00 18 3	0.9 014 4	0. 02 46 1	0.1 063 9	0. 00 18 8		655	3 0	652	1 3	652	1 1		0.0 0%	6 5 2	1
M O2 2A - 11	2 2 5	8 4	2. 6 7	0.15 572	0. 00 15 7	10. 377 83	0. 10 11 5	0.4 834 1	0. 00 62 7		241 0	1 0	246 9	9	254 2	2 7		- 5.1 9%	2 4 1 0	1 0
M O2 2A - 12	3 0	1 0 3	0. 2 9	0.06 403	0. 00 13 4	1.1 629 2	0. 02 25 1	0.1 317 3	0. 00 19 5		743	1 9	783	1 1	798	1 1		- 1.8 8%	7 9 8	1
M O2 2A - 13	3 8 5	4 7 6	0. 8 1	0.07 331	0. 00 11 3	0.6 092 7	0. 00 85 5	0.0 602 8	0. 00 07 9		102 3	1 3	483	5	377	5		28. 12 %		
M O2 2A - 14	3 1	5 0 4	0. 0 6	0.11 760	0. 00 07 7	5.5 732 1	0. 03 66 6	0.3 437 4	0. 00 38 7		192 0	1 1	191 2	6	190 5	1 9		0.7 9%	1 9 2 0	1
M O2 2A	2 6	3 4	0. 7 5	0.06 540	0. 00 22	1.1 538 5	0. 03 61	0.1 279 8	0. 00 25		787	3 4	779	1 7	776	1 5		0.3 9%	7 7 6	1 5

- 15					4		9		5									
M	1	2	0.	0.05	0.	0.5	0.	0.0	0.		428	1	456	7	462	6	-	4
O2	7	5	7	538	00	669	01	742	00			9					1.3	6
2A	4	0	0		11	3	04	6	10								0%	2
- 16					0		6		3									
M	2	2	0.	0.06	0.	0.8	0.	0.0	0.		664	1	604	7	588	7	2.7	5
O2	0	4	8	170	00	126	01	955	00			5					2%	8
2A	4	0	5		10	0	24	3	12									8
- 17					3		8		6									
M	9	1	0.	0.19	0.	13.	0.	0.5	0.		274	1	271	7	267	2	2.6	2
O2	1	7	5	065	00	536	09	149	00		8	0	8		8	6	1%	7
2A		3	3		14	17	92	9	60									4
- 18					0		2		9									8
M	1	1	0.	0.06	0.	0.8	0.	0.0	0.		751	2	644	1	614	9	4.8	6
O2	1	4	8	429	00	863	01	999	00			0		0			9%	1
2A	8	5	1		14	1	77	9	15									4
- 19					0		1		0									
M	6	1	0.	0.06	0.	0.9	0.	0.1	0.		846	2	682	1	634	9	7.5	6
O2	9	1	5	727	00	582	01	033	00			0		0			7%	3
2A		7	9		14	0	92	2	15									4
- 20					8		7		7									
M	9	1	0.	0.06	0.	0.8	0.	0.1	0.		642	2	650	1	653	9	-	6
O2	7	7	5	108	00	973	01	065	00			1		0			0.4	5
2A		2	6		13	8	81	6	15								6%	3
- 21					4		9		7									
M	5	6	0.	0.07	0.	1.7	0.	0.1	0.		116	1	103	6	971	1	6.2	9
O2	3	6	8	867	00	630	01	625	00		4	1	2			0	8%	7
2A	9	4	1		07	7	49	5	18									1
- 22					0		9		8									
M	9	1	0.	0.06	0.	1.1	0.	0.1	0.		803	1	786	1	780	1	0.7	7
O2	2	3	7	590	00	681	02	285	00			8		0			7%	8
2A		2	0		13	7	13	7	18									0
- 23					1		9		6									
M	1	2	0.	0.05	0.	0.5	0.	0.0	0.		468	1	458	7	456	6	0.4	4
O2	2	3	5	639	00	692	01	732	00			8					4%	5
2A	0	7	1		10	9	01	3	10									6
- 24					8		1		0									
M	1	3	0.	0.05	0.	0.6	0.	0.0	0.		460	2	538	8	556	7	-	5
O2	7	0	5	619	00	983	01	901	00			1					3.2	5
2A	0	5	6		11	5	35	5	12								4%	6
- 25					7		3		6									
M	1	1	0.	0.06	0.	0.8	0.	0.1	0.		697	1	635	8	618	8	2.7	6
O2	4	6	8	266	00	685	01	005	00			7					5%	1

2A - 26	1	8	4		12 0	7	53 2	4	14 1								8			
M O2 2A - 27	2 2 7	2 9 9	0. 7 6	0.06 345	0. 00 09 2	1.0 703 0	0. 01 44 4	0.1 223 4	0. 00 15 5		723 1 3	739	7	744	9		- 0.6 7%	7 4 4	9	
M O2 2A - 28	3 5 6	2 9 4	1. 2 1	0.06 056	0. 00 09 2	0.8 572 0	0. 01 21 3	0.1 026 6	0. 00 13 1		624 1 4	629	7	630	8		- 0.1 6%	6 3 0	8	
M O2 2A - 29	1 9 7	2 8 6	0. 6 9	0.05 577	0. 00 10 8	0.5 556 3	0. 00 99 3	0.0 722 7	0. 00 09 9		443 1 9	449	6	450	6		- 0.2 2%	4 5 0	6	
M O2 2A - 30	1 8 8	2 7 2	0. 6 9	0.07 225	0. 00 08 9	1.6 444 5	0. 01 89 1	0.1 650 8	0. 00 20 3		993 1 1	987	7	985	1 1		0.2 0%	9 8 5	1 1	
M O2 2A - 31	7 6	1 0 2	0. 7 4	0.06 196	0. 00 16 8	0.8 249 2	0. 02 04 8	0.0 965 6	0. 00 16 1		673 2 7	611	1 1	594	9		2.8 6%	5 9 4	9	
M O2 2A - 32	1 7 4	6 0 3	0. 2 9	0.06 219	0. 00 07 3	0.8 712 0	0. 00 96 1	0.1 016 0	0. 00 12 1		681 1 1	636	5	624	7		1.9 2%	6 2 4	7	
M O2 2A - 33	6 5	2 7 2	0. 2 4	0.04 605	0. 00 65 3	0.4 375 2	0. 06 16 0	0.0 689 1	0. 00 12 2			2 5 8	369	4 4	430	7		- 14. 19 %		
M O2 2A - 34	7 5	1 0 5	0. 7 1	0.06 118	0. 00 14 3	0.8 978 5	0. 01 93 2	0.1 064 3	0. 00 16 3		646 2 2	651	1 0	652	9		- 0.1 5%	6 5 2	9	
M O2 2A - 35	1 1 8	2 1 9	0. 5 4	0.06 179	0. 00 11 4	0.8 218 6	0. 01 39 9	0.0 964 7	0. 00 13 2		667 1 7	609	8	594	8		2.5 3%	5 9 4	8	
M O2 2A - 36	1 4 2	3 6 7	0. 3 9	0.05 651	0. 00 09 7	0.5 861 4	0. 00 93 2	0.0 752 3	0. 00 09 9		472 1 6	468	6	468	6		0.0 0%	4 6 8	6	
M	1	3	0.	0.05	0.	0.6	0.	0.0	0.		557	1	479	7	462	6		3.6	4	6

O2 2A - 37	6 5 1 5	0 1 5	874	00 10 9	022 3	01 03 5	743 6	00 10 1		7						8%	6 2	
M O2 2A - 38	6 7 4 6	2 4 6	0.06 529	0. 00 09 7	1.0 795 0	0. 01 49 0	0.1 199 3	0. 00 15 4		784 1 3	743	7	730	9		1.7 8%	7 3 0	9
M O2 2A - 39	8 7 4 3	2 4 3	0.05 425	0. 00 11 5	0.5 577 6	0. 01 09 6	0.0 745 7	0. 00 10 5		381 2 1	450	7	464	6		- 3.0 2%	4 6 4	6
M O2 2A - 40	1 1 4	9 8 6	0.13 283	0. 00 15 3	7.0 824 2	0. 07 73 6	0.3 867 1	0. 00 51 1		213 6	212 2	1 0	210 8	2 4		1.3 3%	2 1 3 6	1 0
M O2 2A - 41	2 6 3	7 4 8	0.12 110	0. 00 07 5	5.9 907 4	0. 03 75 8	0.3 587 8	0. 00 39 7		197 2	197 5	5	197 6	1 9		- 0.2 0%	1 9 7 2	1 1
M O2 2A - 42	4 4 3	1 5 9	0.05 588	0. 00 14 1	0.5 723 7	0. 01 32 5	0.0 743 0	0. 00 11 5		448 2 6	460	9	462	7		- 0.4 3%	4 6 2	7
M O2 2A - 43	4 9 6	3 6	0.06 785	0. 00 25 9	1.1 943 6	0. 04 16 8	0.1 276 7	0. 00 27 6		864 3 8	798	1 9	775	1 6		2.9 7%	7 7 5	1 6
M O2 2A - 44	4 5 1	1 3 4	0.05 782	0. 00 17 3	0.6 051 3	0. 01 66 0	0.0 759 1	0. 00 13 0		523 3 2	480	1 1	472	8		1.6 9%	4 7 2	8
M O2 2A - 45	1 6 3	1 5 5	0.05 938	0. 00 12 6	0.8 213 2	0. 01 60 9	0.1 003 1	0. 00 14 5		581 2 0	609	9	616	8		- 1.1 4%	6 1 6	8
M O2 2A - 46	9 6 7	2 7 5	0.06 151	0. 00 09 7	0.8 521 0	0. 01 24 9	0.1 004 8	0. 00 13 0		657 1 4	626	7	617	8		1.4 6%	6 1 7	8
M O2 2A - 47	7 6 3	1 6 6	0.84 080	0. 00 45 2	271 .68 826	1. 72 71 6	2.3 436 4	0. 02 67 3		499 2	569 5	6	778 1	5 2		- 35. 84 %		

M O2 2A - 48	3 2 5 3	2 5 3	0. 1 3	0.05 940	0. 00 11 1	0.6 594 8	0. 01 13 6	0.0 805 2	0. 00 10 9	582	1 7	514	7	499	7	3.0 1%	4 9 9	7
M O2 2A - 49	9 4 6 0	2 6 0	0. 3 6	0.05 842	0. 00 10 5	0.6 938 4	0. 01 15 6	0.0 861 4	0. 00 11 5	546	1 7	535	7	533	7	0.3 8%	5 3 3	7
M O2 2A - 50	1 0 4	8 8	1. 1 9	0.08 403	0. 00 37 1	1.9 854 7	0. 08 12 5	0.1 713 6	0. 00 28 1	129 3	8 8	111 1	2 8	102 0	1 5	26. 76 %		
M O2 2A - 51	1 7 9 5	3 9 0 4	0. 0 4	0.12 394	0. 00 08 9	6.5 959 8	0. 04 71 6	0.3 860 0	0. 00 43 8	201 4	1 1	205 9	6	210 4	2 0	- 4.2 8%	2 0 1 4	1
M O2 2A - 52	1 6 3	1 8 5	0. 8 8	0.06 105	0. 00 11 9	0.8 588 5	0. 01 54 5	0.1 020 4	0. 00 14 2	641	1 8	629	8	626	8	0.4 8%	6 2 6	8
M O2 2A - 53	9 8 9 7	2 9 3 3	0. 3 3	0.06 034	0. 00 11 4	0.6 086 7	0. 01 05 6	0.0 731 7	0. 00 10 0	616	1 7	483	7	455	6	6.1 5%	4 5 5	6
M O2 2A - 54	4 0 1	8 1	0. 4 9	0.06 044	0. 00 17 3	0.8 621 8	0. 02 27 7	0.1 034 7	0. 00 17 6	619	2 9	631	1 2	635	1 0	- 0.6 3%	6 3 5	1 0
M O2 2A - 55	1 4 0	2 0 5	0. 6 8	0.06 829	0. 00 10 5	1.3 120 6	0. 01 87 3	0.1 393 6	0. 00 18 1	877	1 3	851	8	841	1 0	1.1 9%	8 4 1	1 0
M O2 2A - 56	3 5 4	4 4	0. 8 0	0.11 796	0. 00 28 6	2.9 077 6	0. 06 20 1	0.1 787 9	0. 00 32 9	192 6	1 7	138 4	1 6	106 0	1 8	81. 70 %		
M O2 2A - 57	8 2 9	2 4 3	0. 3 3	0.05 595	0. 00 13 3	0.5 583 1	0. 01 21 9	0.0 723 8	0. 00 10 8	450	2 4	450	8	450	6	0.0 0%	4 5 0	6
M O2 2A -	1 3 4	2 7 9	0. 4 8	0.05 848	0. 00 18 1	0.5 632 4	0. 01 59 4	0.0 698 5	0. 00 12 3	548	3 3	454	1 0	435	7	4.3 7%	4 3 5	7

58																				
M O2 2A - 59	1 1 6	1 1 5	1. 0 1	0.06 584	0. 00 15 7	1.1 301 9	0. 02 47 7	0.1 245 0	0. 00 19 5		801	2 2	768	1 2	756	1 1		1.5 9%	7 5 6	1 1
M O2 2A - 60	1 7 7	1 4 4	1. 2 3	0.07 360	0. 00 12 0	1.6 605 5	0. 02 49 7	0.1 636 5	0. 00 22 1		103 1	1 4	994	1 0	977	1 2		1.7 4%	9 7 7	1 2
M O2 2A - 61	1 0 6	1 3 4	0. 7 9	0.07 086	0. 00 59 2	0.8 351 3	0. 06 77 5	0.0 854 8	0. 00 17 0		953	1 7 7	616	3 7	529	1 0		16. 45 %		
M O2 2A - 62	8 5	1 5 8	0. 5 4	0.05 765	0. 00 20 2	0.6 077 2	0. 01 95 1	0.0 764 6	0. 00 14 5		516	3 9	482	1 2	475	9		1.4 7%	4 7 5	9
M O2 2A - 63	2 0 4	2 1 8	0. 9 4	0.06 245	0. 00 13 0	0.8 513 3	0. 01 62 4	0.0 988 9	0. 00 14 2		690	1 9	625	9	608	8		2.8 0%	6 0 8	8
M O2 2A - 64	2 8	4 6	0. 6 0	0.06 475	0. 00 26 3	0.8 828 9	0. 03 26 6	0.0 989 0	0. 00 21 8		766	4 2	643	1 8	608	1 3		5.7 6%	6 0 8	1 3
M O2 2A - 65	1 0 8	2 6 9	0. 4 0	0.06 027	0. 00 10 8	0.8 040 7	0. 01 33 1	0.0 967 7	0. 00 12 9		613	1 6	599	7	595	8		0.6 7%	5 9 5	8
M O2 2A - 66	1 0 1	3 0 2	0. 3 4	0.06 356	0. 00 10 6	0.7 876 1	0. 01 21 5	0.0 898 8	0. 00 11 8		727	1 5	590	7	555	7		6.3 1%	5 5 5	7
M O2 2A - 67	1 1 5	1 7 5	0. 6 6	0.06 825	0. 00 11 6	1.2 395 1	0. 01 94 7	0.1 317 3	0. 00 17 7		876	1 5	819	9	798	1 0		2.6 3%	7 9 8	1 0
M O2 2A - 68	1 1 9	4 6 8	0. 2 5	0.05 878	0. 00 08 7	0.5 819 1	0. 00 80 1	0.0 718 0	0. 00 08 9		559	1 3	466	5	447	5		4.2 5%	4 4 7	5
M O2 2A	8 1	1 9 2	0. 4 2	0.06 297	0. 00 11	0.9 901 6	0. 01 64	0.1 140 5	0. 00 15		707	1 6	699	8	696	9		0.4 3%	6 9 6	9

- 69					3		4		4										
M	3	4	0.	0.11	0.	5.1	0.	0.3	0.		188	1	184	6	180	1	4.3	1	1
O2	2	6	6	535	00	440	03	234	00		5	0	3		7	8	2%	8	0
2A	1	6	9		09	4	90	7	36									8	
- 70					0		8		9									5	
M	1	2	0.	0.06	0.	0.6	0.	0.0	0.		657	1	538	8	510	7	5.4	5	7
O2	0	2	4	152	00	989	01	824	00			9					9%	1	
2A	1	7	4		12	1	31	1	11									0	
- 71					6		8		7										
M	1	2	0.	0.05	0.	0.5	0.	0.0	0.		498	2	449	7	439	6	2.2	4	6
O2	0	8	3	716	00	556	01	705	00			0					8%	3	
2A	5	3	7		11	9	05	1	09									9	
- 72					7		1		8										
M	7	6	0.	0.06	0.	1.2	0.	0.1	0.		917	1	824	6	790	9	4.3	7	9
O2	7	4	1	962	00	507	01	303	00			1					0%	9	
2A		1	2		08	7	39	2	15									0	
- 73					3		6		6										
M	1	5	0.	0.05	0.	0.6	0.	0.0	0.		562	1	477	5	460	6	3.7	4	6
O2	1	3	2	885	00	003	00	740	00			4					0%	6	
2A	4	6	1		08	1	84	0	09									0	
- 74					9		6		2										
M	3	3	0.	0.12	0.	5.5	0.	0.3	0.		197	1	190	6	183	1	7.6	1	1
O2	1	5	0	125	00	027	04	292	00		5	0	1		5	8	3%	9	0
2A		8	9		09	9	11	1	37									7	
- 75					3		3		4									5	
M	6	1	0.	0.06	0.	0.8	0.	0.0	0.		817	1	622	2	570	8	9.1	5	8
O2	9	0	6	635	00	455	04	924	00			3		7			2%	7	
2A	1	9	3		40	0	96	3	13			0						0	
- 76		3			1		0		3										
M	2	3	0.	0.06	0.	1.0	0.	0.1	0.		757	1	707	7	692	8	2.1	6	8
O2	3	0	7	446	00	069	01	133	00			3					7%	9	
2A	7	2	8		09	5	43	2	14									2	
- 77					9		0		5										
M	1	2	0.	0.05	0.	0.5	0.	0.0	0.		534	2	452	8	436	6	3.6	4	6
O2	2	0	6	812	00	603	01	699	00			3					7%	3	
2A	7	1	3		13	3	18	4	10									6	
- 78					4		5		3										
M	1	1	1.	0.05	0.	0.5	0.	0.0	0.		466	2	441	9	436	7	1.1	4	7
O2	6	7	0	634	00	436	01	699	00			8					5%	3	
2A	9	0	0		15	2	33	9	11									6	
- 79					0		2		0										
M	3	2	1.	0.06	0.	0.8	0.	0.0	0.		626	1	602	8	596	8	1.0	5	8
O2	3	9	1	064	00	098	01	968	00			7					1%	9	

2A - 80	7	2	5		11 0	8	36 3	9	13 0									6		
M O2 2A - 81	1 5 7	2 7 3	0. 5 8	0.06 270	0. 00 10 7	0.8 687 9	0. 01 37 5	0.1 005 3	0. 00 13 2		698	1 5	635	7	618	8		2.7 5%	6 1 8	8
M O2 2A - 82	2 0 7	4 5 0	0. 4 6	0.06 080	0. 00 08 7	0.8 007 9	0. 01 06 1	0.0 955 5	0. 00 11 8		632	1 3	597	6	588	7		1.5 3%	5 8 8	7
M O2 2A - 83	4 5	1 0 2	0. 4 4	0.06 760	0. 00 16 0	1.0 617 2	0. 02 30 6	0.1 139 3	0. 00 17 8		856	2 2	735	1 1	696	1 0		5.6 0%	6 9 6	1 0
M O2 2A - 84	2 4 4	3 3 8	0. 7 2	0.07 188	0. 00 09 0	1.4 953 4	0. 01 74 7	0.1 509 1	0. 00 18 4		983	1 1	928	7	906	1 0		2.4 3%	9 0 6	1 0
M O2 2A - 85	1 4 7	3 2 8	0. 4 5	0.05 825	0. 00 11 8	0.5 831 6	0. 01 08 9	0.0 726 3	0. 00 10 1		539	1 9	466	7	452	6		3.1 0%	4 5 2	6
M O2 2A - 86	3 5	7 3	0. 4 8	0.06 183	0. 00 19 9	0.9 238 0	0. 02 73 5	0.1 084 0	0. 00 19 8		668	3 4	664	1 4	663	1 2		0.1 5%	6 6 3	1 2
M O2 2A - 87	2 7 1	3 5 3	0. 7 7	0.07 713	0. 00 10 8	1.8 123 7	0. 02 35 9	0.1 704 7	0. 00 21 7		112 5	1 2	105 0	9	101 5	1 2		10. 84 %		
M O2 2A - 88	8 9	1 4 9	0. 6 0	0.04 651	0. 00 55 9	0.4 685 5	0. 05 55 2	0.0 730 6	0. 00 15 0		24	2 3 9	390	3 8	455	9		- 14. 29 %		
M O2 2A - 89	1 8 0	1 1 8	1. 5 3	0.06 294	0. 00 15 9	0.8 736 7	0. 02 02 8	0.1 007 1	0. 00 15 8		706	2 5	638	1 1	619	9		3.0 7%	6 1 9	9
M O2 2A - 90	7 9	2 1 8	0. 3 6	0.06 030	0. 00 13 0	0.7 792 2	0. 01 54 5	0.0 937 5	0. 00 13 5		614	2 1	585	9	578	8		1.2 1%	5 7 8	8
M	3	8	0.	0.06	0.	1.2	0.	0.1	0.		839	2	816	1	809	1		0.8	8	1

O2 2A - 91	3	8	3 7	703	00 16 5	347 5	02 79 7	336 4	00 21 4			3		3		2		7%	0 9	2	
M O2 2A - 92	3 3 8	1 1 7	2. 9 0	0.06 000	0. 00 16 2	0.7 923 0	0. 01 97 4	0.0 958 1	0. 00 15 5			604	2 8	592	1 1	590	9		0.3 4%	5 9 0	9
M O2 2A - 93	1 3 3	3 0 4	0. 4 4	0.06 183	0. 00 11 0	0.7 869 0	0. 01 29 4	0.0 923 4	0. 00 12 3			668	1 6	589	7	569	7		3.5 1%	5 6 9	7
M O2 2A - 94	1 2 9	2 8 2	0. 4 6	0.06 776	0. 00 11 4	1.2 388 4	0. 01 92 4	0.1 326 5	0. 00 17 6			861	1 4	818	9	803	1 0		1.8 7%	8 0 3	1 0
M O2 2A - 95	2 2 4	2 2 7	0. 9 9	0.06 900	0. 00 13 0	0.8 583 8	0. 01 47 7	0.0 902 7	0. 00 12 5			899	1 6	629	8	557	7		12. 93 %		
M O2 2A - 96	7 4	1 3 6	0. 5 4	0.06 175	0. 00 15 3	0.8 479 6	0. 01 92 8	0.0 996 4	0. 00 15 5			665	2 4	624	1 1	612	9		1.9 6%	6 1 2	9
M O2 2A - 97	1 4 2	1 9 2	0. 7 4	0.06 595	0. 00 12 9	1.0 760 4	0. 01 93 5	0.1 183 8	0. 00 16 6			805	1 7	742	9	721	1 0		2.9 1%	7 2 1	1 0
M O2 2A - 98	3 5 8	2 1 9	1. 6 3	0.07 641	0. 00 12 2	1.8 068 7	0. 02 66 2	0.1 715 8	0. 00 22 9			110 6	1 3	104 8	1 0	102 1	1 3		8.3 3%	1 1 0 6	1 3
M O2 2A - 99	2 2 8	2 4 2	0. 9 4	0.12 560	0. 00 34 8	6.5 079 4	0. 15 72 1	0.3 758 1	0. 00 51 1			203 7	5 0	204 7	2 1	205 7	2 4		- 0.9 7%	2 0 3 7	5 0
M O2 2A - 10 0	4 9	1 0 6	0. 4 6	0.06 428	0. 00 18 8	0.8 219 9	0. 02 19 8	0.0 927 9	0. 00 16 0			751	2 9	609	1 2	572	9		6.4 7%	5 7 2	9
M O2 3-	2 3	2 8 2	0. 0 8	0.05 949	0. 00 04	0.8 332 6	0. 00 64	0.1 015 7	0. 00 10			585	1 1	615	4	624	6		- 1.4 4%	6 2 4	6

01					8		5		9										
M O2 3-02	216	380	0.57	0.05488	0.00045	0.56032	0.00442	0.07404	0.00080		407	12	452	3	460	5		-1.74%	460
M O2 3-03	65	519	0.113	0.12061	0.00083	5.91329	0.03987	0.35554	0.00388		1965	10	1963	6	1961	18		0.20%	1965
M O2 3-04	102	119	0.86	0.05621	0.00058	0.55513	0.00536	0.07162	0.00080		461	11	448	3	446	5		0.45%	446
M O2 3-05	110	347	0.32	0.05367	0.00042	0.54223	0.00410	0.07327	0.00078		357	12	440	3	456	5		-3.51%	456
M O2 3-06	144	613	0.24	0.05907	0.00052	0.69314	0.00579	0.08510	0.00093		570	11	535	3	526	6		1.71%	526
M O2 3-07	173	375	0.46	0.05567	0.00054	0.55844	0.00514	0.07275	0.00080		439	11	451	3	453	5		-0.44%	453
M O2 3-08	54	309	0.18	0.11772	0.00072	5.63457	0.03413	0.34711	0.00370		1922	11	1921	5	1921	18		0.05%	1921
M O2 3-09	93	197	0.47	0.05885	0.00074	0.88057	0.01032	0.10852	0.00127		562	12	641	6	664	7		-3.46%	664
M O2 3-10	36	114	0.32	0.06118	0.00043	0.90574	0.00622	0.10737	0.00114		646	12	655	3	657	7		-0.30%	657
M O2 3-11	22	281	0.08	0.06427	0.00053	1.08455	0.00855	0.12238	0.00133		751	11	746	4	744	8		0.27%	744
M O2 3-12	173	278	0.62	0.06439	0.00046	1.09971	0.00762	0.12386	0.00132		754	12	753	4	753	8		0.00%	753
M O2 3-13	256	480	0.53	0.05531	0.00068	0.54896	0.00631	0.07198	0.00083		425	12	444	4	448	5		-0.89%	448
M O2 3-14	117	214	0.55	0.07142	0.00065	1.67217	0.01433	0.16980	0.00189		969	11	998	5	1011	10		-4.15%	1011
M	1	1	0.	0.05	0.	0.5	0.	0.0	0.		428	1	446	6	449	5		-	4

O2 3- 15	6 2	7 5	9 2	539	00 09 5	512 5	00 87 9	721 8	00 09 1			6					0.6 7%	4 9	
M O2 3- 16	3 4	8 6	0. 3 9	0.07 414	0. 00 14 9	1.8 417 1	0. 03 06 5	0.1 801 7	0. 00 20 4		104 5	4 2	106 0	1 1	106 8	1 1	- 2.1 5%	1 0 4 5	4 2
M O2 3- 17	8 8	2 2 0	0. 4 0	0.06 102	0. 00 07 5	0.8 781 5	0. 01 01 4	0.1 043 7	0. 00 12 2		640	1 1	640	5	640	7	0.0 0%	6 4 0	7
M O2 3- 18	6 9	1 1 6	0. 6 0	0.06 808	0. 00 07 3	1.3 236 8	0. 01 33 2	0.1 410 0	0. 00 16 2		871	1 1	856	6	850	9	0.7 1%	8 5 0	9
M O2 3- 19	8 5	1 1 1	0. 7 7	0.05 839	0. 00 06 6	0.6 148 0	0. 00 64 8	0.0 763 6	0. 00 08 7		544	1 1	487	4	474	5	2.7 4%	4 7 4	5
M O2 3- 20	1 0 0	1 9 9	0. 5 0	0.12 203	0. 00 10 6	6.0 702 6	0. 05 05 6	0.3 607 7	0. 00 41 7		198 6	1 0	198 6	7	198 6	2 0	0.0 0%	1 9 8 6	0
M O2 3- 21	2 2	2 8 1	0. 0 8	0.05 994	0. 00 06 5	0.7 859 9	0. 00 79 5	0.0 951 1	0. 00 10 7		601	1 1	589	5	586	6	0.5 1%	5 8 6	6
M O2 3- 22	1 5 2	2 1 0	0. 7 2	0.06 415	0. 00 03 9	1.0 230 0	0. 00 62 3	0.1 156 6	0. 00 12 2		747	1 2	715	3	706	7	1.2 7%	7 0 6	7
M O2 3- 23	1 6 1	9 1 7	0. 1 8	0.05 942	0. 00 06 4	0.6 554 7	0. 00 65 8	0.0 800 0	0. 00 09 0		583	1 1	512	4	496	5	3.2 3%	4 9 6	5
M O2 3- 24	6 6	2 0 7	0. 3 2	0.14 124	0. 00 07 7	7.7 378 6	0. 04 26 9	0.3 973 4	0. 00 41 8		224 2	1 1	220 1	5	215 7	1 9	3.9 4%	2 2 4 2	1
M O2 3- 25	1 3 8	3 3 9	0. 4 1	0.05 618	0. 00 05 9	0.5 558 0	0. 00 54 7	0.0 717 5	0. 00 08 0		459	1 1	449	4	447	5	0.4 5%	4 4 7	5
M O2 3- 26	1 2 1	3 2 0	0. 3 8	0.05 951	0. 00 05 5	0.7 239 5	0. 00 63 5	0.0 882 4	0. 00 09 7		586	1 1	553	4	545	6	1.4 7%	5 4 5	6
M O2 3- 27	3 3 6	2 6 9	1. 2 5	0.06 640	0. 00 12 9	1.0 264 2	0. 01 83 4	0.1 121 2	0. 00 15 6		819	1 7	717	9	685	9	4.6 7%	6 8 5	9
M O2 3-	4 1	5 6	0. 7 4	0.06 226	0. 00 05	0.9 568 2	0. 00 81	0.1 114 5	0. 00 12		683	1 1	682	4	681	7	0.1 5%	6 8 1	7

28					6		4		2										
M O2 3-29	1 1 4	2 3 1	0. 4 9	0.06 044	0. 00 03 9	0.8 641 6	0. 00 55 0	0.1 037 1	0. 00 11 0		619	1 2	632	3	636	6		- 0.6 3%	6 3 6
M O2 3-30	6 4 1	8 4 6	0. 7 6	0.05 989	0. 00 06 1	0.8 222 5	0. 00 79 5	0.0 995 8	0. 00 11 1		600	1 1	609	4	612	7		- 0.4 9%	6 1 2
M O2 3-31	2 1	2 6 6	0. 0 8	0.06 265	0. 00 09 0	0.9 511 0	0. 01 27 0	0.1 101 1	0. 00 13 4		696	1 3	679	7	673	8		0.8 9%	6 7 3
M O2 3-32	3 0	8 0	0. 3 8	0.06 625	0. 00 07 6	1.0 492 2	0. 01 12 9	0.1 148 7	0. 00 13 3		814	1 1	728	6	701	8		3.8 5%	7 0 1
M O2 3-33	7 2	1 1 5	0. 6 2	0.05 701	0. 00 06 0	0.5 718 2	0. 00 56 7	0.0 727 4	0. 00 08 1		492	1 1	459	4	453	5		1.3 2%	4 5 3
M O2 3-34	1 0 1	2 3 2	0. 4 4	0.06 261	0. 00 11 4	0.9 310 5	0. 01 56 5	0.1 078 5	0. 00 14 3		695	1 6	668	8	660	8		1.2 1%	6 6 0
M O2 3-35	4 5	1 1 8	0. 3 8	0.22 184	0. 00 30 7	16. 767 38	0. 13 87 2	0.5 481 9	0. 00 60 8		299 4	2 3	292 2	8	281 8	2 5		6.2 5%	2 9 9 4
M O2 3-36	1 2 8	2 4 9	0. 5 1	0.06 431	0. 00 07 2	1.0 995 9	0. 01 15 2	0.1 240 2	0. 00 14 2		752	1 1	753	6	754	8		- 0.1 3%	7 5 4
M O2 3-37	4 0	1 5 6	0. 2 6	0.05 672	0. 00 04 6	0.5 606 8	0. 00 43 9	0.0 717 0	0. 00 07 7		481	1 1	452	3	446	5		1.3 5%	4 4 6
M O2 3-38	2 2 8	5 8 0	0. 3 9	0.05 456	0. 00 06 3	0.5 342 7	0. 00 57 9	0.0 710 3	0. 00 08 1		394	1 1	435	4	442	5		- 1.5 8%	4 4 2
M O2 3-39	7 0	2 1 0	0. 3 3	0.05 624	0. 00 07 1	0.5 523 2	0. 00 65 0	0.0 712 3	0. 00 08 3		462	1 2	447	4	444	5		0.6 8%	4 4 4
M O2 3-40	1 3 2	2 0 3	0. 6 5	0.06 596	0. 00 15 5	1.0 738 3	0. 02 18 6	0.1 180 8	0. 00 13 9		805	5 0	741	1 1	720	8		2.9 2%	7 2 0
M O2 3-41	2 1	2 6 7	0. 0 8	0.09 792	0. 00 08 5	3.5 789 8	0. 02 95 3	0.2 651 0	0. 00 30 0		158 5	1 0	154 5	7	151 6	1 5		4.5 5%	1 5 8 5
M	9	1	0.	0.06	0.	0.8	0.	0.1	0.		691	1	639	4	624	6		2.4	6

O2 3- 42	5	8 0	5 3	248	00 05 2	758 9	00 69 8	016 8	00 11 1		1						0%	2 4	
M O2 3- 43	1 3 1	3 0 8	0. 4 3	0.07 056	0. 00 11 9	1.4 868 4	0. 01 92 8	0.1 528 3	0. 00 16 6		945 3 5	925	8	917	9		0.8 7%	9 1 7	9
M O2 3- 44	1 1 4	3 7 2	0. 3 1	0.06 175	0. 00 07 9	0.8 207 4	0. 00 97 9	0.0 964 1	0. 00 11 4		665 1 2	608	5	593	7		2.5 3%	5 9 3	7
M O2 3- 45	1 7 1	1 3 1	1. 3 0	0.21 296	0. 00 14 4	16. 234 99	0. 10 96 1	0.5 529 5	0. 00 62 0		292 8	1 0	289 1	6	283 7	2 6	3.2 1%	2 9 2 8	1 0
M O2 3- 46	5 7	5 9	0. 9 6	0.05 947	0. 00 05 1	0.7 841 2	0. 00 64 6	0.0 956 4	0. 00 10 4		584 1 1	588	4	589	6		- 0.1 7%	5 8 9	6
M O2 3- 47	2 4 6	3 2 6	0. 7 5	0.06 249	0. 00 07 7	0.8 951 3	0. 01 02 7	0.1 038 9	0. 00 12 1		691 1 1	649	6	637	7		1.8 8%	6 3 7	7
M O2 3- 48	8 0	1 3 9	0. 5 8	0.06 119	0. 00 07 9	0.7 875 3	0. 00 94 5	0.0 933 5	0. 00 11 0		646 1 2	590	5	575	6		2.6 1%	5 7 5	6
M O2 3- 49	1 1 9	1 0 6	1. 1 2	0.06 420	0. 00 06 8	0.9 027 9	0. 00 89 8	0.1 020 0	0. 00 11 6		748 1 1	653	5	626	7		4.3 1%	6 2 6	7
M O2 3- 50	9 1	1 6 2	0. 5 6	0.06 905	0. 00 04 7	1.2 966 8	0. 00 86 0	0.1 362 1	0. 00 14 5		900 1 2	844	4	823	8		2.5 5%	8 2 3	8
M O2 3- 51	2 0	2 5 6	0. 0 8	0.18 060	0. 00 31 5	10. 399 57	0. 13 41 9	0.4 176 3	0. 00 49 2		265 8	3 0	247 1	1 2	225 0	2 2	18. 13 %		
M O2 3- 52	2 6 5	2 8 0	0. 9 5	0.07 574	0. 00 06 8	1.7 353 6	0. 01 47 2	0.1 661 8	0. 00 18 5		108 8	1 0	102 2	5	991	1 0	3.1 3%	9 9 1	1 0
M O2 3- 53	3 4	1 3 0	0. 2 6	0.05 683	0. 00 07 5	0.5 688 1	0. 00 70 4	0.0 725 9	0. 00 08 5		485 1 2	457	5	452	5		1.1 1%	4 5 2	5
M O2 3- 54	8 6	1 9 5	0. 4 4	0.16 113	0. 00 11 9	10. 283 52	0. 07 47 7	0.4 629 1	0. 00 52 4		246 8	1 0	246 1	7	245 2	2 3	0.6 5%	2 4 6 8	1 0
M O2 3-	6 3	6 9	0. 9 0	0.06 118	0. 00 04	0.8 775 1	0. 00 64	0.1 040 3	0. 00 11		646 1 2	640	3	638	7		0.3 1%	6 3 8	7

55					6		2		2										
M O2 3-56	213	505	0.42	0.05952	0.00056	0.80049	0.00720	0.09755	0.0108		58611	597	4	600	6		-0.50%	600	6
M O2 3-57	175	243	0.72	0.05710	0.00067	0.600416	0.00667	0.07675	0.0088		49511	480	4	477	5		0.63%	477	5
M O2 3-58	620	240	0.26	0.07011	0.00093	1.48610	0.01846	0.15375	0.0187		93212	925	8	922	10		0.33%	922	10
M O2 3-59	420	802	0.52	0.05704	0.00071	0.505283	0.00645	0.07030	0.0081		49312	447	4	438	5		2.05%	438	5
M O2 3-60	1200	1913	0.63	0.06207	0.00098	0.90777	0.01328	0.10609	0.0134		67714	656	7	650	8		0.92%	650	8
M O2 3-61	190	2418	0.408	0.05562	0.00133	0.504236	0.0138	0.07073	0.0081		43754	440	7	441	5		-0.23%	441	5
M O2 3-62	913	2536	0.36	0.05662	0.00063	0.507622	0.0602	0.07382	0.0084		47711	462	4	459	5		0.65%	459	5
M O2 3-63	1022	2540	0.40	0.06891	0.00081	1.107571	0.01293	0.12376	0.0145		89611	789	6	752	8		4.92%	752	8
M O2 3-64	390	1174	0.34	0.06183	0.00216	0.801473	0.0262	0.09558	0.0129		66877	605	15	588	8		2.89%	588	8
M O2 3-65	290	580	0.50	0.05762	0.00170	0.507107	0.01539	0.07189	0.0086		51566	459	10	448	5		2.46%	448	5
M O2 3-66	1972	2572	0.52	0.06087	0.00058	0.703260	0.0664	0.08729	0.0097		63511	558	4	539	6		3.53%	539	6
M O2 3-67	1004	2594	0.39	0.05540	0.00077	0.503914	0.0704	0.07058	0.0084		42813	438	5	440	5		-0.45%	440	5
M O2 3-68	1185	1757	0.67	0.05540	0.00055	0.505142	0.0524	0.07220	0.0080		42811	446	3	449	5		-0.67%	449	5
M	830	300	0.00	0.05000	0.00000	0.50000	0.00000	0.00000	0.00000		45911	451	3	449	5		0.400%	449	5

O2 3- 69	3	2 1	2 6	617	00 05 4	588 0	00 51 0	721 6	00 08 0			1					5%	4 9	
M O2 3- 70	1 9 1	3 5 7	0. 5 3	0.05 640	0. 00 08 7	0.5 667 5	0. 00 81 3	0.0 728 8	0. 00 08 9		468	1 4	456	5	453	5	0.6 6%	4 5 3	5
M O2 3- 71	1 9 1	2 4 1	0. 0 8	0.05 601	0. 00 05 6	0.5 610 2	0. 00 52 8	0.0 726 6	0. 00 08 1		453	1 1	452	3	452	5	0.0 0%	4 5 2	5
M O2 3- 72	2 1 6	3 3 8	0. 6 4	0.07 412	0. 00 05 6	1.7 366 7	0. 01 27 7	0.1 699 4	0. 00 18 4		104 5	1 1	102 2	5	101 2	1 0	3.2 6%	1 0 4 5	1
M O2 3- 73	3 9 7	2 9 1	1. 3 6	0.06 653	0. 00 14 0	1.1 821 7	0. 02 10 0	0.1 288 7	0. 00 14 5		823	4 5	792	1 0	781	8	1.4 1%	7 8 1	8
M O2 3- 74	7 5 3	2 2 3	0. 3 4	0.13 385	0. 00 09 5	6.9 461 3	0. 04 82 5	0.3 764 0	0. 00 41 6		214 9	1 0	210 5	6	205 9	1 9	4.3 7%	2 1 4 9	1 0
M O2 3- 75	5 4 9	1 0 9	0. 4 9	0.07 105	0. 00 06 0	1.2 604 5	0. 01 01 1	0.1 286 8	0. 00 14 1		959	1 1	828	5	780	8	6.1 5%	7 8 0	8
M O2 3- 76	4 5 8	1 9 3	0. 2 3	0.06 157	0. 00 18 4	0.8 707 3	0. 02 37 5	0.1 025 6	0. 00 12 6		659	6 6	636	1 3	629	7	1.1 1%	6 2 9	7
M O2 3- 78	7 5 6	1 3 5	0. 5 5	0.06 172	0. 00 04 9	0.8 511 2	0. 00 65 7	0.1 000 2	0. 00 10 8		664	1 1	625	4	615	6	1.6 3%	6 1 5	6
M O2 3- 79	3 1 3	3 9 6	0. 7 9	0.07 966	0. 00 13 8	1.8 943 5	0. 02 52 7	0.1 724 7	0. 00 18 9		118 9	3 5	107 9	9	102 6	1 0	15. 89 %		
M O2 3- 80	1 3 1	3 3 8	0. 3 9	0.06 166	0. 00 05 9	0.7 346 4	0. 00 67 0	0.0 864 1	0. 00 09 6		662	1 1	559	4	534	6	4.6 8%	5 3 4	6
M O2 3- 81	1 8 1	2 3 1	0. 0 8	0.06 252	0. 00 07 2	0.7 123 0	0. 00 76 9	0.0 826 3	0. 00 09 5		692	1 1	546	5	512	6	6.6 4%	5 1 2	6
M O2 3- 82	2 4 6	2 8 9	0. 8 5	0.06 299	0. 00 05 6	0.9 248 8	0. 00 78 1	0.1 065 0	0. 00 11 7		708	1 1	665	4	652	7	1.9 9%	6 5 2	7
M O2 3- 83	2 2 6	2 9 5	0. 7 7	0.06 290	0. 00 05	0.8 752 3	0. 00 70	0.1 009 2	0. 00 11		705	1 1	638	4	620	6	2.9 0%	6 2 0	6

83					2		1		0											
M O2 3-84	3 1 3	3 7 9	0. 8 3	0.06 282	0. 00 06 2	0.9 582 3	0. 00 90 2	0.1 106 3	0. 00 12 4		702	1 1	682	5	676	7		0.8 9%	6 7 6	7
M O2 3-85	7 7	2 1 9	0. 3 5	0.06 616	0. 00 11 6	1.2 045 0	0. 01 64 5	0.1 320 5	0. 00 14 5		811	3 8	803	8	800	8		0.3 7%	8 0 0	8
M O2 3-86	8 0	3 2 7	0. 2 5	0.17 051	0. 00 09 2	8.5 486 6	0. 04 72 2	0.3 636 2	0. 00 38 3		256 3	1 0	229 1	5	199 9	1 8		28. 21 %		
M O2 3-87	5 1 0	5 9 4	0. 8 6	0.05 914	0. 00 05 8	0.5 921 3	0. 00 54 7	0.0 726 1	0. 00 08 1		572	1 1	472	3	452	5		4.4 2%	4 5 2	5
M O2 3-88	4 8 5	3 6 1	1. 3. 5 4	0.05 937	0. 00 05 4	0.6 649 1	0. 00 57 5	0.0 812 3	0. 00 08 9		581	1 1	518	4	503	5		2.9 8%	5 0 3	5
M O2 3-89	1 1 2	3 6 1	0. 3 1	0.06 147	0. 00 06 2	0.7 092 3	0. 00 67 6	0.0 836 8	0. 00 09 4		656	1 1	544	4	518	6		5.0 2%	5 1 8	6
M O2 3-90	6 3	2 6 6	0. 2 4	0.05 991	0. 00 06 2	0.7 833 3	0. 00 77 0	0.0 948 3	0. 00 10 7		600	1 1	587	4	584	6		0.5 1%	5 8 4	6
M O2 3-91	1 8 3	2 3 3	0. 0 8	0.06 150	0. 00 06 3	0.8 058 2	0. 00 78 1	0.0 950 4	0. 00 10 7		657	1 1	600	4	585	6		2.5 6%	5 8 5	6
M O2 3-92	1 1 1	2 4 5	0. 4 5	0.06 019	0. 00 06 6	0.6 420 8	0. 00 66 8	0.0 773 7	0. 00 08 8		610	1 1	504	4	480	5		5.0 0%	4 8 0	5
M O2 3-93	6 1	2 0 1	0. 3 0	0.05 862	0. 00 19 4	0.5 661 5	0. 01 73 5	0.0 700 5	0. 00 08 8		553	7 4	456	1 1	436	5		4.5 9%	4 3 6	5
M O2 3-94	1 1 1	1 8 0	0. 6 2	0.06 486	0. 00 06 0	0.9 497 1	0. 00 84 2	0.1 062 0	0. 00 11 8		770	1 1	678	4	651	7		4.1 5%	6 5 1	7
M O2 3-95	1 6 5	2 3 4	0. 7 0	0.12 453	0. 00 26 3	4.9 800 8	0. 08 35 1	0.2 900 5	0. 00 37 4		202 2	3 8	181 6	1 4	164 2	1 9		23. 14 %		
M O2 3-96	6 1	1 1 3	0. 5 4	0.05 833	0. 00 05 3	0.5 829 0	0. 00 50 4	0.0 724 8	0. 00 08 0		542	1 1	466	3	451	5		3.3 3%	4 5 1	5
M	4	3	0.	0.07	0.	1.7	0.	0.1	0.		105	1	101	5	100	1		5.0	1	1

O2 3- 97	4 4	8 4	1 1	441	00 06 0	252 8	01 34 4	681 6	00 18 4		3	1	8		2	0	9%	0 5 3	1
M O2 3- 98	1 5 5	2 0 9	0. 7 4	0.06 813	0. 00 07 3	1.1 874 9	0. 01 20 3	0.1 264 2	0. 00 14 5		873	1 1	795	6	767	8	3.6 5%	7 6 7	8
M O2 3- 99	1 2 8	1 4 5	0. 8 9	0.06 735	0. 00 11 3	0.8 905 7	0. 01 37 8	0.0 959 0	0. 00 12 5		849	1 4	647	7	590	7	9.6 6%	5 9 0	7
M O2 3- 10 0	9 4	7 6	1. 2 4	0.06 483	0. 00 07 4	1.0 726 4	0. 01 15 6	0.1 199 9	0. 00 13 9		769	1 1	740	6	731	8	1.2 3%	7 3 1	8
M O2 4- 01	1 8	4 3	0. 4 1	0.06 934	0. 00 15 1	1.3 243 5	0. 02 66 4	0.1 385 1	0. 00 20 2		909	2 0	856	1 2	836	1 1	2.3 9%	8 3 6	1
M O2 4- 02	6 7	1 5 2	0. 4 4	0.06 038	0. 00 08 1	0.7 997 5	0. 00 99 9	0.0 960 6	0. 00 11 3		617	1 2	597	6	591	7	1.0 2%	5 9 1	7
M O2 4- 03	1 1 0	3 6 2	0. 3 0	0.06 298	0. 00 08 2	0.9 678 0	0. 01 16 9	0.1 114 5	0. 00 13 2		708	1 2	687	6	681	8	0.8 8%	6 8 1	8
M O2 4- 04	4 0 6	2 6 6	0. 1 5	0.05 682	0. 00 11 2	0.5 877 4	0. 00 94 3	0.0 750 1	0. 00 08 6		485	4 5	469	6	466	5	0.6 4%	4 6 6	5
M O2 4- 05	6 1 2	1 4 2	0. 4 2	0.06 073	0. 00 08 8	0.8 718 0	0. 01 17 3	0.1 041 2	0. 00 12 7		630	1 3	637	6	639	7	- 0.3 1%	6 3 9	7
M O2 4- 06	1 0 6	1 1 9	0. 8 9	0.05 618	0. 00 10 5	0.5 721 5	0. 00 99 8	0.0 738 6	0. 00 09 6		459	1 8	459	6	459	6	0.0 0%	4 5 9	6
M O2 4- 07	3 7 0	6 8 7	0. 5 4	0.07 201	0. 00 04 6	1.5 856 3	0. 01 00 4	0.1 597 0	0. 00 16 9		986	1 2	965	4	955	9	1.0 5%	9 5 5	9
M O2 4- 08	2 3 3	2 9 5	0. 7 9	0.06 657	0. 00 06 7	1.1 181 7	0. 01 05 8	0.1 218 3	0. 00 13 7		824	1 1	762	5	741	8	2.8 3%	7 4 1	8
M O2 4- 09	2 7 9	2 5 6	1. 0 9	0.06 256	0. 00 06 5	0.8 546 1	0. 00 83 5	0.0 990 7	0. 00 11 1		693	1 1	627	5	609	7	2.9 6%	6 0 9	7
M	2	2	1.	0.06	0.	0.8	0.	0.0	0.		674	1	622	5	608	7	2.3	6	7

O2 4- 10	4 7	0 7	1 9	200	00 07 2	459 2	00 92 2	989 5	00 11 4			1					0%	0 8	
M O2 4- 11	5 4	2 5 5	0. 2 1	0.13 619	0. 00 08 0	7.5 318 2	0. 04 41 1	0.4 011 0	0. 00 42 5		217 9	1 1	217 7	5	217 4	2 0	0.2 3%	2 1 7 9	1 1
M O2 4- 12	1 9 0	1 7 9	1. 0 6	0.06 067	0. 00 07 0	0.9 014 6	0. 00 97 1	0.1 077 7	0. 00 12 3		628	1 1	653	5	660	7	- 1.0 6%	6 6 0	7
M O2 4- 13	7 4	1 7 6	0. 4 2	0.06 481	0. 01 97 5	0.6 482 9	0. 19 68 2	0.0 725 5	0. 00 19 8		768	6 1 5	507	1 2 1	452	1 2	12. 17 %		
M O2 4- 14	2 8 5	4 4 0	0. 6 5	0.06 620	0. 00 04 9	1.2 320 6	0. 00 87 9	0.1 349 7	0. 00 14 4		813	1 1	815	4	816	8	- 0.1 2%	8 1 6	8
M O2 4- 15	3 4 3	2 2 3	1. 5 4	0.05 963	0. 00 06 4	0.8 153 9	0. 00 81 7	0.0 991 8	0. 00 11 2		590	1 1	605	5	610	7	- 0.8 2%	6 1 0	7
M O2 4- 16	1 0 7	1 0 0	1. 0 7	0.06 176	0. 00 09 7	0.9 035 4	0. 01 31 5	0.1 061 1	0. 00 13 2		666	1 4	654	7	650	8	0.6 2%	6 5 0	8
M O2 4- 17	1 9 3	3 0 3	0. 6 4	0.06 131	0. 00 06 2	0.9 144 2	0. 00 87 8	0.1 081 7	0. 00 12 1		650	1 1	659	5	662	7	- 0.4 5%	6 6 2	7
M O2 4- 18	9 4	1 5 9	0. 5 9	0.05 579	0. 00 08 6	0.5 614 5	0. 00 80 5	0.0 729 9	0. 00 08 9		444	1 4	452	5	454	5	- 0.4 4%	4 5 4	5
M O2 4- 19	1 2 9	2 0 6	0. 6 2	0.10 861	0. 00 07 4	4.8 845 5	0. 03 24 4	0.3 261 9	0. 00 35 2		177 6	1 0	180 0	6	182 0	1 7	- 2.4 2%	1 7 6	1 0
M O2 4- 20	9 3	3 0 7	0. 3 0	0.05 649	0. 00 06 0	0.5 585 8	0. 00 56 0	0.0 717 1	0. 00 08 0		472	1 1	451	4	446	5	1.1 2%	4 4 6	5
M O2 4- 21	1 1 7	2 9 5	0. 4 0	0.12 729	0. 00 07 5	6.5 866 8	0. 03 89 2	0.3 752 9	0. 00 39 7		206 1	1 1	205 8	5	205 4	1 9	0.3 4%	2 0 6 1	1 1
M O2 4- 22	1 4 3	1 2 1	1. 1 9	0.12 357	0. 00 09 1	6.2 616 1	0. 04 49 0	0.3 675 3	0. 00 40 6		200 8	1 0	201 3	6	201 8	1 9	- 0.5 0%	2 0 0 8	1 0
M O2 4- 2	1 1 2	6 1 4	1. 8 4	0.06 770	0. 00 12	0.9 416 5	0. 01 62	0.1 008 8	0. 00 13		859	1 7	674	8	620	8	8.7 1%	6 2 0	8

23					7		5		7									
M O2 4- 24	4 0	7 1	0. 5 7	0.06 576	0. 00 09 7	1.1 221 9	0. 01 53 3	0.1 237 6	0. 00 15 3	799	1 3	764	7	752	9	1.6 0%	7 5 2	9
M O2 4- 25	1 9 5	4 1 5	0. 4 7	0.05 984	0. 00 05 3	0.7 396 9	0. 00 62 7	0.0 896 5	0. 00 09 8	598	1 1	562	4	553	6	1.6 3%	5 5 3	6
M O2 4- 26	1 4 3	8 0	1. 8 0	0.18 871	0. 00 13 6	13. 108 42	0. 09 30 0	0.5 038 0	0. 00 56 9	273 1	1 0	268 7	7	263 0	2 4	3.8 4%	2 7 3 1	1 0
M O2 4- 27	1 9 1	9 3 8	0. 2 0	0.06 123	0. 00 04 0	0.8 404 8	0. 00 54 1	0.0 995 6	0. 00 10 5	647	1 2	619	3	612	6	1.1 4%	6 1 2	6
M O2 4- 28	2 6	4 8 6	0. 0 5	0.06 011	0. 00 04 8	0.7 683 2	0. 00 59 2	0.0 927 0	0. 00 10 0	608	1 1	579	3	571	6	1.4 0%	5 7 1	6
M O2 4- 29	8 5	1 8 7	0. 4 6	0.06 025	0. 00 06 5	0.8 423 9	0. 00 86 0	0.1 014 0	0. 00 11 4	613	1 1	620	5	623	7	- 0.4 8%	6 2 3	7
M O2 4- 30	9 6	1 3 6	0. 7 0	0.06 301	0. 00 07 9	0.8 303 8	0. 00 97 3	0.0 955 8	0. 00 11 2	709	1 1	614	5	588	7	4.4 2%	5 8 8	7
M O2 4- 31	2 3 3	1 0 4	2. 2 3	0.12 294	0. 00 08 7	6.0 661 3	0. 04 17 2	0.3 578 8	0. 00 39 1	199 9	1 0	198 5	6	197 2	1 9	1.3 7%	1 9 9 9	1 0
M O2 4- 32	1 5 3	2 6 0	0. 5 9	0.06 066	0. 00 05 9	0.7 489 5	0. 00 68 7	0.0 895 5	0. 00 09 9	627	1 1	568	4	553	6	2.7 1%	5 5 3	6
M O2 4- 33	1 4 4	2 3 7	0. 6 1	0.05 706	0. 00 06 8	0.5 550 4	0. 00 61 9	0.0 705 5	0. 00 08 1	494	1 1	448	4	439	5	2.0 5%	4 3 9	5
M O2 4- 34	8 6	2 7 5	0. 3 1	0.05 903	0. 00 06 1	0.6 796 9	0. 00 65 6	0.0 835 1	0. 00 09 3	568	1 1	527	4	517	6	1.9 3%	5 1 7	6
M O2 4- 35	1 0 4	1 9 0	0. 5 5	0.05 807	0. 00 09 0	0.5 328 4	0. 00 76 4	0.0 665 6	0. 00 08 2	532	1 4	434	5	415	5	4.5 8%	4 1 5	5
M O2 4- 36	9 2	1 6 4	0. 5 6	0.06 013	0. 00 06 9	0.7 692 7	0. 00 82 0	0.0 927 9	0. 00 10 6	608	1 1	579	5	572	6	1.2 2%	5 7 2	6
M	1	2	0.	0.06	0.	0.8	0.	0.1	0.	676	5	629	1	616	7	2.1	6	7

O2 4- 37	4 4	5 0	5 8	206	00 16 2	573 3	02 01 3	001 9	00 11 5			7		1			1%	1 6	
M O2 4- 38	9 2	2 5	0. 4 1	0.05 530	0. 00 06 3	0.5 230 7	0. 00 55 7	0.0 686 0	0. 00 07 7		424	1 1	427	4	428	5	- 0.2 3%	4 2 8	5
M O2 4- 39	1 2 1	1 2 1	1. 0 0	0.05 679	0. 00 09 3	0.5 510 1	0. 00 83 7	0.0 703 7	0. 00 08 7		483	1 5	446	5	438	5	1.8 3%	4 3 8	5
M O2 4- 40	2 0 6	5 8 4	0. 3 5	0.05 596	0. 00 04 6	0.5 558 3	0. 00 44 1	0.0 720 5	0. 00 07 7		451	1 1	449	3	448	5	0.2 2%	4 4 8	5
M O2 4- 41	1 9 9	1 8 7	1. 0 6	0.06 094	0. 00 06 5	0.8 134 5	0. 00 81 5	0.0 968 2	0. 00 10 9		637	1 1	604	5	596	6	1.3 4%	5 9 6	6
M O2 4- 42	1 2 0	1 2 0	1. 0 0	0.06 367	0. 00 08 4	1.0 642 2	0. 01 30 2	0.1 212 4	0. 00 14 4		731	1 2	736	6	738	8	- 0.2 7%	7 3 8	8
M O2 4- 43	9 2	3 9	2. 3 7	0.11 643	0. 00 11 8	5.4 422 7	0. 05 21 6	0.3 390 4	0. 00 40 7		190 2	1 0	189 2	8	188 2	2 0	1.0 6%	1 9 0 2	1 0
M O2 4- 44	8 6	8 6 2	0. 1 0	0.05 665	0. 00 07 8	0.5 554 8	0. 00 50 1	0.0 711 1	0. 00 07 4		478	3 1	449	3	443	4	1.3 5%	4 4 3	4
M O2 4- 45	6 3	1 9 0	0. 3 3	0.05 723	0. 00 13 8	0.5 696 1	0. 01 20 1	0.0 721 9	0. 00 08 4		500	5 4	458	8	449	5	2.0 0%	4 4 9	5
M O2 4- 46	3 8 3	6 9 5	0. 5 5	0.06 563	0. 00 04 5	0.8 990 3	0. 00 59 7	0.0 993 5	0. 00 10 5		795	1 2	651	3	611	6	6.5 5%	6 1 1	6
M O2 4- 47	7 9	1 2 0	0. 6 6	0.05 879	0. 00 08 5	0.5 774 3	0. 00 77 4	0.0 712 4	0. 00 08 5		559	1 3	463	5	444	5	4.2 8%	4 4 4	5
M O2 4- 48	1 3 0	1 5 4	0. 8 4	0.06 742	0. 00 06 3	1.2 446 7	0. 01 09 5	0.1 339 1	0. 00 14 8		851	1 1	821	5	810	8	1.3 6%	8 1 0	8
M O2 4- 49	1 0 3	2 4 4	0. 4 2	0.05 802	0. 00 13 5	0.6 868 9	0. 01 40 3	0.0 858 6	0. 00 09 6		531	5 2	531	8	531	6	0.0 0%	5 3 1	6
M O2 4-	7 1	8 0	0. 8 8	0.12 211	0. 00 09	6.0 432 0	0. 04 51	0.3 589 7	0. 00 40		198 7	1 0	198 2	7	197 7	1 9	0.5 1%	1 9 8	1 0

50					5		0		0									7	
M O2 4- 51	2 0 9	2 5 1	0. 8 3	0.06 559	0. 00 05 5	1.1 243 5	0. 00 89 3	0.1 243 4	0. 00 13 4		793	1 1	765	4	755	8		1.3 2%	7 5 5
M O2 4- 52	1 1 5	1 4 0	0. 8 2	0.06 185	0. 00 07 2	0.8 670 3	0. 00 94 2	0.1 016 7	0. 00 11 6		669	1 1	634	5	624	7		1.6 0%	6 2 4
M O2 4- 53	3 0	4 9	0. 6 2	0.11 546	0. 00 11 6	5.3 736 5	0. 05 08 5	0.3 375 9	0. 00 40 2		188 7	1 0	188 1	8	187 5	1 9		0.6 4%	1 8 8 7
M O2 4- 54	9 8	2 0 6	0. 4 8	0.05 625	0. 00 06 7	0.5 428 2	0. 00 60 5	0.0 699 9	0. 00 08 0		462	1 1	440	4	436	5		0.9 2%	4 3 6
M O2 4- 55	1 0 3	2 2 1	0. 4 6	0.06 385	0. 00 05 8	0.9 636 6	0. 00 82 6	0.1 094 8	0. 00 12 0		737	1 1	685	4	670	7		2.2 4%	6 7 0
M O2 4- 56	2 4	3 2	0. 7 5	0.06 549	0. 00 16 0	1.1 673 2	0. 02 63 5	0.1 292 9	0. 00 19 9		790	2 4	785	1 2	784	1 1		0.1 3%	7 8 4
M O2 4- 57	2 0 0	2 7 1	0. 7 4	0.06 396	0. 00 19 1	0.8 488 6	0. 02 32 7	0.0 962 6	0. 00 11 3		740	6 5	624	1 3	592	7		5.4 1%	5 9 2
M O2 4- 58	9 5	2 6 1	0. 3 6	0.05 988	0. 00 12 7	0.7 521 4	0. 01 35 5	0.0 911 0	0. 00 10 2		599	4 7	569	8	562	6		1.2 5%	5 6 2
M O2 4- 59	2 9	1 9 7	0. 1 5	0.14 922	0. 00 20 6	5.3 302 6	0. 04 47 1	0.2 590 6	0. 00 28 4		233 7	2 4	187 4	7	148 5	1 5		57. 37 %	
M O2 4- 60	8 4	1 0 0	0. 8 4	0.05 778	0. 00 09 0	0.5 637 9	0. 00 81 6	0.0 707 7	0. 00 08 7		521	1 4	454	5	441	5		2.9 5%	4 4 1
M O2 4- 61	1 2 4	1 8 3	0. 6 8	0.12 985	0. 00 07 9	6.6 081 1	0. 03 97 4	0.3 691 5	0. 00 39 1		209 6	1 0	206 0	5	202 5	1 8		3.5 1%	2 0 9 6
M O2 4- 62	1 6	1 1 0	0. 1 5	0.05 835	0. 00 07 7	0.6 501 2	0. 00 80 1	0.0 808 2	0. 00 09 5		543	1 2	509	5	501	6		1.6 0%	5 0 1
M O2 4- 63	1 0 3	2 1 0	0. 4 9	0.06 036	0. 00 05 9	0.8 398 0	0. 00 77 5	0.1 009 2	0. 00 11 1		617	1 1	619	4	620	6		- 0.1 6%	6 2 0
M	9	9	0.	0.05	0.	0.7	0.	0.0	0.		577	1	596	6	601	7		-	6

O2 4- 64	2	4	9 9	928	00 08 4	979 9	01 05 8	976 4	00 11 6			3					0.8 3%	0 1	
M O2 4- 65	1 0 7	3 0 0	0. 3 6	0.12 857	0. 00 07 2	6.4 036 1	0. 03 57 2	0.3 612 9	0. 00 37 7		207 9	1 1	203 3	5	198 8	1 8	4.5 8%	2 0 7 9	1 1
M O2 4- 66	1 5 0	1 6 7	0. 9 0	0.06 360	0. 00 06 0	0.9 936 5	0. 00 89 0	0.1 133 2	0. 00 12 5		728	1 1	701	5	692	7	1.3 0%	6 9 2	7
M O2 4- 67	5 6 8	1 6 3	0. 3 3	0.05 848	0. 00 13 2	0.7 363 1	0. 01 43 2	0.0 913 2	0. 00 10 3		548	5 0	560	8	563	6	- 0.5 3%	5 6 3	6
M O2 4- 68	1 1 3	2 2 8	0. 4 9	0.05 541	0. 00 06 1	0.5 504 5	0. 00 57 0	0.0 720 5	0. 00 08 1		429	1 1	445	4	448	5	- 0.6 7%	4 4 8	5
M O2 4- 69	6 8 6	2 2 0	0. 3 0	0.05 696	0. 00 06 1	0.5 594 0	0. 00 56 7	0.0 712 4	0. 00 07 9		490	1 1	451	4	444	5	1.5 8%	4 4 4	5
M O2 4- 70	1 3 2	4 5 5	0. 2 9	0.06 204	0. 00 04 6	0.9 199 4	0. 00 65 1	0.1 075 6	0. 00 11 4		675	1 1	662	3	659	7	0.4 6%	6 5 9	7
M O2 4- 71	1 2 2	3 9 2	0. 3 1	0.06 109	0. 00 04 7	0.9 168 7	0. 00 67 7	0.1 088 8	0. 00 11 6		642	1 1	661	4	666	7	- 0.7 5%	6 6 6	7
M O2 4- 72	1 2 9	3 3 4	0. 3 9	0.06 542	0. 00 05 2	0.9 319 9	0. 00 70 3	0.1 033 3	0. 00 11 1		788	1 1	669	4	634	6	5.5 2%	6 3 4	6
M O2 4- 73	5 9 1	1 6 7	0. 3 7	0.05 676	0. 00 07 1	0.5 741 1	0. 00 67 0	0.0 733 7	0. 00 08 4		482	1 2	461	4	456	5	1.1 0%	4 5 6	5
M O2 4- 74	5 9 2	2 2 2	0. 2 7	0.05 442	0. 00 05 9	0.5 361 1	0. 00 55 0	0.0 714 6	0. 00 07 9		388	1 1	436	4	445	5	- 2.0 2%	4 4 5	5
M O2 4- 75	4 8 5	8 5 7	0. 5 7	0.06 282	0. 00 21 6	0.7 698 8	0. 02 44 6	0.0 888 8	0. 00 11 6		702	7 5	580	1 4	549	7	5.6 5%	5 4 9	7
M O2 4- 76	5 9 8	1 3 3	0. 4 3	0.05 910	0. 00 07 3	0.6 959 7	0. 00 80 2	0.0 854 2	0. 00 09 8		571	1 1	536	5	528	6	1.5 2%	5 2 8	6
M O2 4- 77	1 1 5	3 5 6	0. 3 2	0.05 294	0. 00 04	0.5 221 8	0. 00 44	0.0 715 4	0. 00 07		326	1 1	427	3	445	5	- 4.0 4%	4 4 5	5

77					8		7		7										
M	9	1	0.	0.05	0.	0.5	0.	0.0	0.		466	1	460	4	459	5		0.2	4
O2	2	5	5	634	00	730	00	737	00			2						2%	5
4-		5	9		07	1	67	7	08										9
78					1		6		5										
M	1	2	0.	0.05	0.	0.5	0.	0.0	0.		532	1	458	3	444	5		3.1	4
O2	0	3	4	805	00	703	00	712	00			1						5%	4
4-	5	1	5		05	0	53	7	07										4
79					8		9		8										
M	1	3	0.	0.05	0.	0.8	0.	0.1	0.		583	2	611	9	618	8		-	6
O2	4	7	3	943	00	246	01	006	00			1						1.1	1
4-			9		12	9	61	7	14									3%	8
80					6		3		0										
M	2	2	0.	0.05	0.	0.7	0.	0.0	0.		600	1	589	4	587	6		0.3	5
O2	0	9	7	990	00	866	00	952	00			1						4%	8
4-	8	7	0		05	6	64	6	10										7
81					2		3		3										
M	2	1	1.	0.06	0.	1.3	0.	0.1	0.		916	1	869	5	851	9		2.1	8
O2	0	6	2	958	00	531	01	410	00			0						2%	5
4-	3	8	1		06	8	15	7	15										1
82					3		7		5										
M	1	1	1.	0.06	0.	0.8	0.	0.1	0.		634	1	630	5	629	7		0.1	6
O2	3	1	1	086	00	604	00	025	00			1						6%	2
4-	2	5	5		07	8	97	7	11										9
83					4		1		8										
M	1	1	1.	0.06	0.	0.8	0.	0.0	0.		641	1	604	4	594	6		1.6	5
O2	8	8	0	106	00	129	00	965	00			1						8%	9
4-	3	0	2		06	3	77	7	10										4
84					2		5		7										
M	5	5	1.	0.06	0.	0.8	0.	0.0	0.		721	1	612	2	583	8		4.9	5
O2	5	0	0	339	00	272	03	946	00			0		2				7%	8
4-			9		31	0	89	4	13			7							3
85					2		7		6										
M	1	1	0.	0.05	0.	0.8	0.	0.1	0.		602	1	623	5	629	7		-	6
O2	2	4	8	996	00	476	00	025	00			1						0.9	2
4-	1	9	1		06	2	87	5	11									5%	9
86					6		1		5										
M	5	2	0.	0.06	0.	0.8	0.	0.1	0.		660	1	637	4	631	6		0.9	6
O2	9	6	2	159	00	731	00	028	00			1						5%	3
4-		1	3		05	2	73	4	11										1
87					4		1		1										
M	9	1	0.	0.05	0.	0.5	0.	0.0	0.		508	1	451	4	440	5		2.5	4
O2	6	9	4	742	00	592	00	706	00			1						0%	4
4-		9	8		06	1	59	4	08										0
88					6		9		0										
M	1	3	0.	0.06	0.	0.8	0.	0.1	0.		651	1	629	4	623	6		0.9	6
O2	8	1	5	134	00	579	00	014	00			1						6%	2
4-	3	6	8		04	4	65	6	10										3
89					9		1		8										
M	4	6	0.	0.06	0.	1.0	0.	0.1	0.		732	1	744	7	748	9		-	7
O2	0	2	6	372	00	807	01	230	00			3						0.5	4
4-			5		09	6	48	3	15									3%	8
90					4		0		1										
M	1	1	0.	0.05	0.	0.8	0.	0.0	0.		585	1	600	4	604	6		-	6
																			6

O2 4- 91	4 2	7 0	8 4	948	00 06 1	052 3	00 78 0	982 0	00 10 9		1						0.6 6%	0 4	
M O2 4- 92	7 6	2 6 5	0. 2 9	0.17 231	0. 00 10 2	10. 841 54	0. 06 39 9	0.4 564 3	0. 00 48 4		258 0	1 0	251 0	5	242 4	2 1	6.4 4%	2 5 8 0	1 0
M O2 4- 93	2 5 7	7 0 8	0. 3 6	0.05 881	0. 00 04 0	0.7 463 3	0. 00 48 8	0.0 920 5	0. 00 09 6		560	1 2	566	3	568	6	- 0.3 5%	5 6 8	6
M O2 4- 94	7 6	1 8 1	0. 4 2	0.05 565	0. 00 06 6	0.5 663 2	0. 00 62 8	0.0 738 2	0. 00 08 3		438	1 1	456	4	459	5	- 0.6 5%	4 5 9	5
M O2 4- 95	4 6	8 0	0. 5 8	0.05 978	0. 00 08 4	0.7 742 3	0. 01 01 5	0.0 939 6	0. 00 11 2		596	1 3	582	6	579	7	0.5 2%	5 7 9	7
M O2 4- 96	3 3	9 1	0. 3 6	0.06 109	0. 00 07 7	0.8 569 6	0. 01 00 7	0.1 017 6	0. 00 11 8		642	1 1	628	6	625	7	0.4 8%	6 2 5	7
M O2 4- 97	3 6	9 5	0. 3 7	0.05 980	0. 00 07 7	0.8 316 4	0. 01 00 3	0.1 008 8	0. 00 11 8		596	1 2	615	6	620	7	- 0.8 1%	6 2 0	7
M O2 4- 98	4 9	8 7	0. 5 7	0.05 542	0. 00 08 9	0.5 632 9	0. 00 84 3	0.0 737 3	0. 00 09 1		429	1 5	454	5	459	5	- 1.0 9%	4 5 9	5
M O2 4- 99	2 3 1	3 9 9	0. 5 8	0.06 054	0. 00 04 8	0.8 101 2	0. 00 61 9	0.0 970 8	0. 00 10 4		623	1 1	603	3	597	6	1.0 1%	5 9 7	6
M O2 4- 10 0	9 3	2 6 5	0. 3 5	0.05 713	0. 00 05 4	0.5 667 9	0. 00 50 3	0.0 719 7	0. 00 07 8		497	1 1	456	3	448	5	1.7 9%	4 4 8	5

Table 3. Analytical data for the dated Carboniferous zircons: 13 FR 52, MO 15, MO 16, MO 17, MO 26.

Spot No.	Th (ppm)	U (ppm)	Th / U	Ratios						Ages (Ma)						Discor-dance (%)	Best Ages	$\pm 1\sigma$
				207 Pb/206 Pb	$\pm 1\sigma$	207 Pb/235 U	$\pm 1\sigma$	206 Pb/238 U	$\pm 1\sigma$	207 Pb/206 Pb	$\pm 1\sigma$	207 Pb/235 U	$\pm 1\sigma$	206 Pb/238 U	$\pm 1\sigma$			
13 FR 52 - 01	139	164	0.85	0.05704	0.00196	0.75868	0.02380	0.09651	0.00184	493	37	573	14	594	11	-3.54%	594	11
13 FR 52 - 02	847	502	0.40	0.05992	0.00101	0.81344	0.01264	0.09849	0.00129	601	15	604	7	606	8	-0.33%	606	8
13 FR 52 - 03	260	803	0.33	0.05244	0.00410	0.59476	0.04293	0.08229	0.00292	305	101	474	27	510	17	-7.06%	510	17
13 FR 52 - 04	847	801	0.41	0.16437	0.00214	10.37135	0.07288	0.45763	0.00502	250	22	246	7	242	22	2.96%	242	22
13 FR 52 - 05	888	318	2.88	0.06159	0.00457	0.71064	0.04841	0.08371	0.00291	660	87	545	29	518	17	5.21%	518	17
13 FR 52 - 06	1240	206	0.62	0.13188	0.00355	6.81295	0.15214	0.37468	0.00561	212	48	208	20	205	26	3.51%	205	26
13 FR 52 - 07	199	267	0.75	0.10868	0.00104	5.27113	0.04766	0.35189	0.00418	177	10	186	8	194	20	-8.59%	194	20
13 FR 52 - 08	202	244	0.83	0.05742	0.00133	0.79225	0.01688	0.10011	0.00150	508	23	592	10	615	9	-3.74%	615	9
13 FR	109	29	0.	0.05535	0.0000	0.42089	0.0101	0.05517	0.0000	426	32	357	8	346	6	3.18%	346	6

52 - 09	8	1	3 7		16 3		12 8		09 2									6	
13 FR 52 - 10	2 9	1 0 9	0 . 2 7	0.07 874	0. 00 20 8	2.18 217	0. 05 25 5	0.20 106	0. 00 36 5		116 6	2 2	117 5	1 7	118 1	2 0	- 1.2 7%	1 1 6 6	2 2
13 FR 52 - 11	6 0	1 5 2	0 . 3 9	0.15 755	0. 00 36 7	9.59 402	0. 16 95 4	0.44 165	0. 00 67 0		243 0	4 0	239 7	1 6	235 8	3 0	3.0 5%	2 4 3 0	4 0
13 FR 52 - 12	2 5	4 0	0 . 6 1	0.06 109	0. 00 47 2	0.93 716	0. 06 61 0	0.11 130	0. 00 42 8		642 7	8	671	3 5	680	2 5	- 1.3 2%	6 8 0	2 5
13 FR 52 - 13	3 2 6	1 1 4 7	0 . 2 8	0.05 068	0. 00 08 6	0.35 429	0. 00 55 3	0.05 072	0. 00 06 4		226	1 6	308	4	319	4	- 3.4 5%	3 1 9	4
13 FR 52 - 14	3 7	4 3 4	0 . 0 9	0.05 505	0. 00 15 8	0.57 675	0. 01 51 0	0.07 601	0. 00 12 6		414	3 1	462	1 0	472	8	- 2.1 2%	4 7 2	8
13 FR 52 - 15	4 9	1 6 9	0 . 2 9	0.05 635	0. 00 19 4	0.61 724	0. 01 94 1	0.07 947	0. 00 15 0		466	3 8	488	1 2	493	9	- 1.0 1%	4 9 3	9
13 FR 52 - 16	6 0	1 3 6	0 . 4 4	0.05 641	0. 00 21 2	0.59 320	0. 02 04 7	0.07 628	0. 00 15 1		469	4 3	473	1 3	474	9	- 0.2 1%	4 7 4	9
13 FR 52 - 17	6 9	1 6 9	0 . 4 1	0.05 383	0. 00 21 6	0.41 752	0. 01 52 7	0.05 627	0. 00 11 6		364	4 6	354	1 1	353	7	0.2 8%	3 5 3	7
13 FR 52 - 18	5 2	9 8	0 . 5 3	0.06 005	0. 00 25 5	0.71 241	0. 02 75 6	0.08 607	0. 00 19 3		605	4 6	546	1 6	532	1 1	2.6 3%	5 3 2	1 1
13 FR 52 - 19	1 8 6	3 4 5	0 . 5 4	0.05 412	0. 00 15 2	0.39 267	0. 01 01 0	0.05 263	0. 00 08 5		376	3 0	336	7	331	5	1.5 1%	3 3 1	5
13	1	2	0	0.05	0.	0.43	0.	0.05	0.		450	3	370	9	357	6	3.6	3	6

FR 52 - 20	1 7	0 7	. 5 6	593	00 18 6	902	01 33 0	694	00 10 4		6					4%	5 7	
13 FR 52 - 21	5 0	1 8 1	0 .2 8	0.05 658	0. 00 30 9	0.62 290	0. 03 18 2	0.07 985	0. 00 15 3	475	1 2 4	492	2 0	495	9	- 0.6 1%	4 9 5	9
13 FR 52 - 22	4 0	1 1 7	0 .3 4	0.05 481	0. 00 22 8	0.59 842	0. 02 28 3	0.07 921	0. 00 17 0	404	4 8	476	1 5	491	1 0	- 3.0 5%	4 9 1	1 0
13 FR 52 - 23	8 3	1 4 3	0 .5 8	0.13 705	0. 00 17 1	7.34 841	0. 08 54 2	0.38 895	0. 00 52 8	219 0	1 1	215	1 0	211 8	2 5	3.4 0%	2 1 9 0	1 1
13 FR 52 - 24	3 3 1	3 6 4	0 .9 1	0.06 024	0. 00 20 3	0.79 393	0. 02 43 9	0.09 562	0. 00 18 3	612	3 5	593	1 4	589	1 1	0.6 8%	5 8 9	1 1
13 FR 52 - 25	1 3 3	5 0 5	0 .2 6	0.05 782	0. 00 11 7	0.57 658	0. 01 06 4	0.07 234	0. 00 10 0	523	1 9	462	7	450	6	2.6 7%	4 5 0	6
13 FR 52 - 26	1 1 7	2 0 7	0 .5 6	0.05 635	0. 00 16 5	0.61 435	0. 01 64 4	0.07 909	0. 00 13 3	466	3 1	486	1 0	491	8	- 1.0 2%	4 9 1	8
13 FR 52 - 27	1 0 4	1 5 6	0 .6 7	0.07 619	0. 00 18 5	2.06 253	0. 04 58 6	0.19 637	0. 00 33 2	110 0	2 1	113	1 5	115 6	1 8	- 4.8 4%	1 1 0 0	2 1
13 FR 52 - 28	4 4	7 1	0 .6 2	0.12 133	0. 00 24 7	6.07 912	0. 11 40 9	0.36 346	0. 00 64 1	197 6	1 5	198	1 6	199 9	3 0	- 1.1 5%	1 9 7 6	1 5
13 FR 52 - 29	5 0	9 2	0 .5 4	0.05 866	0. 00 26 2	0.75 395	0. 03 08 6	0.09 324	0. 00 21 5	555	5 0	571	1 8	575	1 3	- 0.7 0%	5 7 5	1 3
13 FR 52 - 30	8 3	2 6 5	0 .3 1	0.11 656	0. 00 22 4	4.49 336	0. 06 50 8	0.27 958	0. 00 35 2	190 4	3 5	173	1 2	158 9	1 8	19. 82 %		

13 FR 52 - 31	8 1 5	5 0 5	0 . 1 6	0.11 914	0. 00 09 8	5.88 898	0. 04 59 8	0.35 855	0. 00 40 9		194 3	1 0	196 0	7	197 5	1 9	- 1.6 2%	1 9 4 3	1 0
13 FR 52 - 32	1 3 2	1 7 6	0 . 7 5	0.06 137	0. 00 16 8	0.91 299	0. 02 28 1	0.10 792	0. 00 18 1		652	2 7	659	1 2	661	1 1	- 0.3 0%	6 6 1	1 1
13 FR 52 - 33	1 2 3	2 9 3	0 . 4 2	0.05 297	0. 00 15 6	0.40 650	0. 01 09 9	0.05 566	0. 00 09 2		328	3 3	346	8	349	6	- 0.8 6%	3 4 9	6
13 FR 52 - 34	9 4	1 6 4	0 . 5 7	0.05 709	0. 00 19 6	0.57 761	0. 01 81 5	0.07 339	0. 00 13 7		495	3 8	463	1 2	457	8	1.3 1%	4 5 7	8
13 FR 52 - 35	5 2	1 1 0	0 . 4 7	0.05 722	0. 00 20 6	0.68 220	0. 02 24 3	0.08 649	0. 00 17 0		500	3 9	528	1 4	535	1 0	- 1.3 1%	5 3 5	1 0
13 FR 52 - 36	5 7	1 8 7	0 . 3 1	0.05 607	0. 00 17 6	0.59 928	0. 01 72 0	0.07 753	0. 00 13 7		455	3 4	477	1 1	481	8	- 0.8 3%	4 8 1	8
13 FR 52 - 37	6 6	1 0 8	0 . 6 1	0.13 059	0. 00 19 9	7.02 280	0. 09 92 4	0.39 008	0. 00 58 3		210 6	1 2	211 4	1 3	212 3	2 7	- 0.8 0%	2 1 0 6	1 2
13 FR 52 - 38	1 2 6	2 8 6	0 . 4 4	0.05 215	0. 00 16 2	0.40 570	0. 01 15 7	0.05 643	0. 00 09 6		292	3 5	346	8	354	6	- 2.2 6%	3 5 4	6
13 FR 52 - 39	1 1 8	1 3 5	0 . 8 7	0.05 970	0. 00 21 3	0.74 753	0. 02 43 6	0.09 082	0. 00 17 9		593	3 8	567	1 4	560	1 1	1.2 5%	5 6 0	1 1
13 FR 52 - 40	8 0	9 9	0 . 8 1	0.05 669	0. 00 26 8	0.81 034	0. 03 50 5	0.10 369	0. 00 25 3		479	5 4	603	2 0	636	1 5	- 5.1 9%	6 3 6	1 5
13 FR 52 -	5 8	2 3 7	0 . 2 5	0.05 093	0. 00 17 3	0.40 340	0. 01 25 9	0.05 745	0. 00 10 2		238	4 0	344	9	360	6	- 4.4 4%	3 6 0	6

41																			
13 FR 52 - 42	6 2	1 5 0	0 . 4 2	0.05 711	0. 00 20 2	0.63 727	0. 02 05 3	0.08 093	0. 00 15 6		496	3 9	501	1 3	502	9	- 0.2 0%	5 0 2	9
13 FR 52 - 43	7 5	1 2 6	0 . 6 0	0.05 921	0. 00 21 0	0.65 145	0. 02 11 0	0.07 981	0. 00 15 4		575	3 8	509	1 3	495	9	2.8 3%	4 9 5	9
13 FR 52 - 44	4 4	1 2 4	0 . 3 6	0.05 697	0. 00 20 5	0.60 429	0. 01 98 9	0.07 694	0. 00 15 0		490	4 0	480	1 3	478	9	0.4 2%	4 7 8	9
13 FR 52 - 45	3 7	3 8	0 . 9 8	0.10 582	0. 00 28 4	4.26 257	0. 10 43 2	0.29 217	0. 00 59 2		172 9	2 0	168 6	2 0	165 2	3 0	4.6 6%	1 7 2 9	2
13 FR 52 - 46	6 1	4 5	1 . 3 5	0.11 561	0. 00 26 9	5.29 397	0. 11 28 2	0.33 214	0. 00 62 7		188 9	1 7	186 8	1 8	184 9	3 0	2.1 6%	1 8 8 9	1
13 FR 52 - 47	1 1 4	2 3 0	0 . 5 0	0.05 192	0. 00 17 6	0.40 109	0. 01 24 6	0.05 603	0. 00 10 0		282	4 0	342	9	351	6	- 2.5 6%	3 5 1	6
13 FR 52 - 48	3 0	1 2 2	0 . 2 5	0.05 355	0. 00 24 6	0.43 772	0. 01 84 4	0.05 929	0. 00 13 3		352	5 6	369	1 3	371	8	- 0.5 4%	3 7 1	8
13 FR 52 - 49	1 3 8	2 4 2	0 . 5 7	0.04 989	0. 00 19 6	0.38 533	0. 01 39 5	0.05 602	0. 00 11 1		190	4 8	331	1 0	351	7	- 5.7 0%	3 5 1	7
13 FR 52 - 50	1 4 0	3 1 1	0 . 4 5	0.05 355	0. 00 15 2	0.41 736	0. 01 08 6	0.05 654	0. 00 09 1		352	3 1	354	8	355	6	- 0.2 8%	3 5 5	6
13 FR 52 - 51	3 5	1 0 4	0 . 3 4	0.05 550	0. 00 24 3	0.60 256	0. 02 42 4	0.07 875	0. 00 17 4		432	5 1	479	1 5	489	1 0	- 2.0 4%	4 8 9	1
13 FR 52	5 3	7 3	0 . 7	0.10 832	0. 00 20	5.18 906	0. 08 97	0.34 748	0. 00 55		177 1	1 4	185 1	1 5	192 3	2 7	- 7.9 0%	1 7 7	1 4

- 52			2		2		0		9									1		
13 FR 52 - 53	6 1 3	1 0 3	0 . 5 9	0.05 908	0. 00 22 3	0.75 208	0. 02 59 1	0.09 233	0. 00 18 8		570	4 1	569	1 5	569	1 1		0.0 0%	5 6 9	1 1
13 FR 52 - 54	5 0	5 5	0 . 9 1	0.12 706	0. 00 25 0	6.53 296	0. 11 85 7	0.37 293	0. 00 64 7		205 8	1 4	205 0	1 6	204 3	3 0		0.7 3%	2 0 5 8	1 4
13 FR 52 - 55	5 2	9 8	0 . 5 3	0.06 054	0. 00 28 8	0.70 646	0. 03 06 1	0.08 464	0. 00 20 6		623	5 3	543	1 8	524	1 2		3.6 3%	5 2 4	1 2
13 FR 52 - 56	5 3	1 4 5	0 . 3 7	0.05 711	0. 00 28 0	0.63 658	0. 02 85 0	0.08 084	0. 00 20 0		496	5 6	500	1 8	501	1 2		- 0.2 0%	5 0 1	1 2
13 FR 52 - 57	5 1	3 7 6	0 . 1 4	0.05 618	0. 00 12 8	0.58 414	0. 01 22 2	0.07 541	0. 00 11 0		459	2 3	467	8	469	7		- 0.4 3%	4 6 9	7
13 FR 52 - 58	6 1	8 2	0 . 7 4	0.05 777	0. 00 24 2	0.64 958	0. 02 48 8	0.08 156	0. 00 17 7		521	4 7	508	1 5	505	1 1		0.5 9%	5 0 5	1 1
13 FR 52 - 59	7 2	1 7 9	0 . 4 0	0.05 672	0. 00 19 3	0.61 827	0. 01 92 5	0.07 906	0. 00 14 8		481	3 7	489	1 2	491	9		- 0.4 1%	4 9 1	9
13 FR 52 - 60	1 5 4	3 3 8	0 . 4 5	0.06 581	0. 00 12 0	1.13 152	0. 01 89 5	0.12 470	0. 00 17 0		800	1 6	768	9	758	1 0		1.3 2%	7 5 8	1 0
13 FR 52 - 61	7 5	1 6 5	0 . 4 5	0.11 251	0. 00 34 3	4.87 586	0. 12 61 4	0.31 431	0. 00 50 9		184 0	5 7	179 8	2 2	176 2	2 5		4.4 3%	1 8 4 0	5 7
13 FR 52 - 62	6 5	9 7	0 . 6 7	0.07 585	0. 00 20 9	1.95 739	0. 04 91 3	0.18 717	0. 00 34 0		109 1	2 4	110 1	1 7	110 6	1 8		- 1.3 6%	1 0 9 1	2 4
13 FR	7 2	1 8	0 .	0.11 374	0. 00	2.63 787	0. 06	0.16 821	0. 00		186 0	5 8	131 1	1 9	100 2	1 6		85. 63		

52 - 63		9	3		35		94		28								%		
			8		5		6		3										
13 FR 52 - 64	3 7	6 6	0 . 5 6	0.05 769	0. 00 31 9	0.62 441	0. 03 14 9	0.07 850	0. 00 21 4		518	6 4	493	2 0	487	1 3	1.2 3%	4 8 7	1 3
13 FR 52 - 65	7 7	2 5 9	0 . 3 0	0.05 875	0. 00 14 9	0.70 221	0. 01 63 1	0.08 670	0. 00 13 6		558	2 5	540	1 0	536	8	0.7 5%	5 3 6	8
13 FR 52 - 66	5 4	1 7 2	0 . 3 2	0.05 771	0. 00 17 5	0.63 639	0. 01 76 2	0.07 998	0. 00 13 8		519	3 2	500	1 1	496	8	0.8 1%	4 9 6	8
13 FR 52 - 67	1 0 0	3 6 6	0 . 2 7	0.05 819	0. 00 11 9	0.79 005	0. 01 48 3	0.09 848	0. 00 13 7		537	2 0	591	8	605	8	- 2.3 1%	6 0 5	8
13 FR 52 - 68	1 0 5	4 6 2	2 . 2 6	0.05 772	0. 00 40 8	0.62 251	0. 04 06 4	0.07 823	0. 00 25 0		519	8 8	491	2 5	486	1 5	1.0 3%	4 8 6	1 5
13 FR 52 - 69	8 7	4 0 7	0 . 2 1	0.16 615	0. 00 20 0	9.91 445	0. 11 14 6	0.43 278	0. 00 59 0		251 9	1 0	242 7	1 0	231 8	2 7	8.6 7%	2 5 1 9	1 0
13 FR 52 - 70	7 8	2 8 1	0 . 2 8	0.05 613	0. 00 15 9	0.61 896	0. 01 61 1	0.07 998	0. 00 13 2		458	3 0	489	1 0	496	8	- 1.4 1%	4 9 6	8
13 FR 52 - 71	1 3 7	1 0 9	1 . 2 6	0.18 298	0. 00 21 3	13.1 198 9	0. 14 60 1	0.52 002	0. 00 71 6		268 0	1 0	268 8	1 0	269 9	3 0	- 0.7 0%	2 6 8 0	1 0
13 FR 52 - 72	3 5	7 2	0 . 4 9	0.10 218	0. 00 27 6	4.02 474	0. 09 91 8	0.28 566	0. 00 57 4		166 4	2 1	163 9	2 0	162 0	2 9	2.7 2%	1 6 6 4	2 1
13 FR 52 - 73	7	2 7	0 . 2 6	0.06 077	0. 00 93 1	0.63 096	0. 09 19 5	0.07 530	0. 00 35 4		631	3 4 8	497	5 7	468	2 1	6.2 0%	4 6 8	2 1
13	5	1	0	0.05	0.	0.64	0.	0.08	0.		425	3	506	1	524	9	-	5	9

FR 52 - 74	7	8 7	. 3 0	531	00 16 8	644	01 80 7	476	00 14 5			3		1			3.4 4%	2 4	
13 FR 52 - 75	2 9	9 6	0 .3 0	0.05 399	0. 00 39 2	0.59 671	0. 03 98 0	0.08 016	0. 00 27 2		371	9 0	475	2 5	497	1 6	- 4.4 3%	4 9 7	1 6
13 FR 52 - 76	7 2	3 0 5	0 .2 4	0.05 632	0. 00 12 5	0.60 399	0. 01 23 4	0.07 778	0. 00 11 2		465	2 2	480	8	483	7	- 0.6 2%	4 8 3	7
13 FR 52 - 77	1 1 8	1 4 9	0 .7 9	0.06 077	0. 00 16 9	0.81 512	0. 02 06 5	0.09 728	0. 00 16 2		631	2 8	605	1 2	598	1 0	1.1 7%	5 9 8	1 0
13 FR 52 - 78	6 6	1 0 6	0 .6 3	0.05 850	0. 00 22 9	0.62 942	0. 02 24 3	0.07 804	0. 00 16 2		549	4 3	496	1 4	484	1 0	2.4 8%	4 8 4	1 0
13 FR 52 - 79	1 5 3	3 7 2	0 .4 1	0.05 253	0. 00 17 2	0.41 809	0. 01 25 6	0.05 772	0. 00 10 2		309	3 8	355	9	362	6	- 1.9 3%	3 6 2	6
13 FR 52 - 80	1 9 9	4 4 1	0 .4 5	0.05 508	0. 00 12 7	0.42 857	0. 00 90 2	0.05 643	0. 00 08 1		415	2 3	362	6	354	5	2.2 6%	3 5 4	5
13 FR 52 - 81	5 5	1 0 4	0 .5 3	0.06 376	0. 00 21 6	0.93 269	0. 02 88 2	0.10 609	0. 00 20 5		734	3 4	669	1 5	650	1 2	2.9 2%	6 5 0	1 2
13 FR 52 - 82	4 5	1 0 4	0 .4 4	0.08 274	0. 00 21 5	1.59 118	0. 03 71 4	0.13 947	0. 00 24 4		126 3	2 2	967	1 5	842	1 4	14. 85 %		
13 FR 52 - 83	2 0	3 5	0 .5 7	0.12 562	0. 00 32 0	6.27 592	0. 14 68 1	0.36 234	0. 00 75 0		203 8	1 8	201 5	2 0	199 3	3 5	2.2 6%	2 0 3 8	1 8
13 FR 52 - 84	4 3	4 1 5	0 .1 0	0.05 895	0. 00 11 2	0.71 530	0. 01 24 3	0.08 800	0. 00 11 8		565	1 8	548	7	544	7	0.7 4%	5 4 4	7

13 FR 52 - 85	7 5 5	7 4 6	1 . 0 1	0.05 792	0. 00 11 7	0.58 702	0. 01 08 8	0.07 350	0. 00 10 1		527	1 9	469	7	457	6		2.6 3%	4 5 7	6
13 FR 52 - 86	1 4	2 3	0 . 5 9	0.06 131	0. 00 48 2	0.77 288	0. 05 58 9	0.09 143	0. 00 33 6		650	9 3	581	3 2	564	2 0		3.0 1%	5 6 4	2 0
13 FR 52 - 87	3 1	8 9	0 . 3 5	0.05 290	0. 00 24 5	0.56 270	0. 02 39 1	0.07 715	0. 00 17 6		325	5 6	453	1 6	479	1 1		- 5.4 3%	4 7 9	1 1
13 FR 52 - 88	9 7	1 6 0	0 . 6 1	0.05 374	0. 00 19 7	0.41 593	0. 01 39 9	0.05 613	0. 00 10 7		360	4 3	353	1 0	352	7		0.2 8%	3 5 2	7
13 FR 52 - 89	2 4	4 4	0 . 5 5	0.13 044	0. 00 72 5	6.30 511	0. 31 90 3	0.35 055	0. 01 45 3		210 4	4 0	201 9	4 4	193 7	6 9		8.6 2%	2 1 0 4	4 0
13 FR 52 - 90	3 3 2	6 4 6	0 . 5 1	0.05 926	0. 00 10 5	0.63 301	0. 01 03 2	0.07 747	0. 00 10 1		577	1 6	498	6	481	6		3.5 3%	4 8 1	6
13 FR 52 - 91	1 2 7	3 0 1	0 . 4 2	0.05 217	0. 00 13 8	0.41 752	0. 01 01 5	0.05 805	0. 00 08 9		293	2 9	354	7	364	5		- 2.7 5%	3 6 4	5
13 FR 52 - 92	1 6 2	2 9 6	0 . 5 5	0.05 311	0. 00 14 8	0.41 545	0. 01 06 2	0.05 673	0. 00 09 0		333	3 1	353	8	356	5		- 0.8 4%	3 5 6	5
13 FR 52 - 93	1 5 3	3 4 3	0 . 4 5	0.05 121	0. 00 13 5	0.39 573	0. 00 96 1	0.05 604	0. 00 08 5		250	2 9	339	7	351	5		- 3.4 2%	3 5 1	5
13 FR 52 - 94	7 1	2 7 7	0 . 2 5	0.18 317	0. 00 15 0	13.0 245 8	0. 10 26 5	0.51 570	0. 00 60 0		268 2	1 0	268 1	7	268 1	2 6		0.0 4%	2 6 8 2	1 0
13 FR 52 -	1 9 1	3 5 9	0 . 5 3	0.05 175	0. 00 13 5	0.41 289	0. 00 98 8	0.05 786	0. 00 08 8		274	2 9	351	7	363	5		- 3.3 1%	3 6 3	5

95																		
13 FR 52 - 96	3 3 6	3 6 9	0 . 9 2	0.05 905	0. 00 40 5	0.64 556	0. 04 06 2	0.07 929	0. 00 25 4	569	8 2	506	2 5	492	1 5	2.8 5%	4 9 2	1 5
13 FR 52 - 97	5 2	9 1	0 . 5 7	0.05 897	0. 00 23 4	0.71 042	0. 02 57 1	0.08 737	0. 00 18 4	566	4 4	545	1 5	540	1 1	0.9 3%	5 4 0	1 1
13 FR 52 - 98	1 2 1	2 9 6	0 . 4 1	0.05 462	0. 00 13 8	0.41 969	0. 00 97 3	0.05 572	0. 00 08 4	397	2 7	356	7	350	5	1.7 1%	3 5 0	5
13 FR 52 - 99	4 6	1 5 1	0 . 3 1	0.05 744	0. 00 16 4	0.62 237	0. 01 63 1	0.07 857	0. 00 13 0	508	3 0	491	1 0	488	8	0.6 1%	4 8 8	8
13 FR 52 - 10 0	5 0	2 2 8	0 . 2 2	0.05 889	0. 00 12 5	0.81 588	0. 01 59 4	0.10 048	0. 00 14 3	563	2 0	606	9	617	8	- 1.7 8%	6 1 7	8
M O1 5- 01	6 4	2 1 7	0 . 3 0	0.05 993	0. 00 17 3	0.07 745	0. 00 15 9	0.64 010	0. 01 69 1	601	2 6	481	1 0	502	1 0	4.3 7%	4 8 1	1 0
M O1 5- 02	2 2 8	2 4 9	0 . 9 2	0.06 350	0. 00 13 7	0.09 760	0. 00 18 5	0.85 453	0. 01 67 4	725	1 9	600	1 1	627	9	4.5 0%	6 0 0	1 1
M O1 5- 03	1 2 1	1 8 4	0 . 6 6	0.13 145	0. 00 19 6	0.38 275	0. 00 71 4	6.93 720	0. 09 47 0	211 7	1 6	208 9	3 3	210 3	1 2	1.3 4%	2 1 1 7	1 6
M O1 5- 04	1 1 4	3 3 9	0 . 3 4	0.05 501	0. 00 23 9	0.05 384	0. 00 13 3	0.40 839	0. 01 62 1	413	4 7	338	8	348	1 2	2.9 6%	3 3 8	8
M O1 5- 05	4 1	8 0	0 . 5 2	0.05 973	0. 00 34 1	0.08 700	0. 00 26 3	0.71 657	0. 03 76 2	594	6 3	538	1 6	549	2 2	2.0 4%	5 3 8	1 6
M O1 5- 06	1 2 5	3 7 0	0 . 3 4	0.06 385	0. 00 14 4	0.10 185	0. 00 19 6	0.89 669	0. 01 83 2	737	1 9	625	1 1	650	1 0	4.0 0%	6 2 5	1 1
M O1	3 9	8 6	0 .	0.06 668	0. 00	0.06 594	0. 00	0.60 627	0. 02	828	4 6	412	1 1	481	1 6	16. 75		

5-07			45		311		176		570							%		
M O1 5-08	82	79	10	0.10834	0.00299	0.31411	0.00759	4.69211	0.011961	1772	21	1761	37	1766	21	0.62%	177	21
M O1 5-09	72	178	041	0.05462	0.00245	0.05601	0.00140	0.42181	0.01744	397	50	351	9	357	12	1.71%	351	9
M O1 5-10	225	362	062	0.06318	0.00126	0.10154	0.00189	0.88457	0.01598	714	18	623	11	643	9	3.21%	623	11
M O1 5-11	79	128	061	0.05901	0.00249	0.08820	0.00219	0.71760	0.02790	567	44	545	13	549	16	0.73%	545	13
M O1 5-12	222	465	048	0.05384	0.00149	0.05698	0.00114	0.42301	0.01068	364	26	357	7	358	8	0.28%	357	7
M O1 5-13	233	309	075	0.05876	0.00146	0.08757	0.00171	0.70950	0.01603	558	22	541	10	544	10	0.55%	541	10
M O1 5-14	184	234	079	0.06429	0.00155	0.10967	0.00216	0.97221	0.02133	751	21	671	13	690	11	2.83%	671	13
M O1 5-15	44	364	012	0.05731	0.00154	0.07753	0.00155	0.61262	0.01498	503	24	481	9	485	9	0.83%	481	9
M O1 5-16	112	157	071	0.09553	0.00183	0.26266	0.00514	3.45945	0.06046	1539	16	1503	26	1518	14	2.40%	153	16
M O1 5-17	101	210	048	0.05825	0.00155	0.08733	0.00174	0.70134	0.01703	539	24	540	10	540	10	0.00%	540	10
M O1 5-18	89	215	042	0.05561	0.00235	0.05502	0.00134	0.42185	0.01634	437	45	345	8	357	12	3.48%	345	8
M O1 5-19	243	260	17	0.07174	0.00152	0.13575	0.00260	1.34273	0.02569	979	18	821	15	864	11	5.24%	821	15
M O1 5-20	84	191	044	0.06264	0.00284	0.08614	0.00225	0.74398	0.03097	696	47	533	13	565	18	6.00%	533	13

M O1 5- 21	3 4 8	3 8 4	0 . 9 0	0.06 131	0. 00 12 1	0.09 229	0. 00 17 0	0.78 005	0. 01 39 8		650	1 8	569	1 0	586	8	2.9 9%	5 6 9	1 0
M O1 5- 22	3 0 4	5 0 4	0 . 0 6	0.18 408	0. 00 23 5	0.51 470	0. 00 93 5	13.0 622 8	0. 15 34 8		269 0	1 5	267 7	4 0	268 4	1 1	0.4 9%	2 6 9 0	1 5
M O1 5- 23	1 2 9	2 8 3	0 . 4 6	0.05 395	0. 00 19 4	0.05 300	0. 00 11 7	0.39 421	0. 01 30 5		369	3 8	333	7	337	1 0	1.2 0%	3 3 3	7
M O1 5- 24	1 1 9	3 6 0	0 . 3 3	0.06 138	0. 00 14 4	0.10 423	0. 00 20 2	0.88 205	0. 01 87 8		653	2 0	639	1 2	642	1 0	0.4 7%	6 3 9	1 2
M O1 5- 25	1 2 2	2 5 3	0 . 4 8	0.06 045	0. 00 16 3	0.09 657	0. 00 19 6	0.80 480	0. 01 98 4		620	2 4	594	1 2	600	1 1	1.0 1%	5 9 4	1 2
M O1 5- 26	1 6 3	2 5 1	0 . 6 5	0.05 389	0. 00 20 0	0.05 467	0. 00 12 3	0.40 615	0. 01 38 1		366	3 9	343	8	346	1 0	0.8 7%	3 4 3	8
M O1 5- 27	5 6	8 5	0 . 6 5	0.10 961	0. 00 40 8	0.31 582	0. 00 93 5	4.77 225	0. 16 46 9		179 3	2 8	176 9	4 6	178 0	2 9	1.3 6%	1 7 9 3	2 8
M O1 5- 28	1 7 3	3 4 1	0 . 5 1	0.05 537	0. 00 19 3	0.05 264	0. 00 11 6	0.40 186	0. 01 28 4		427	3 5	331	7	343	9	3.6 3%	3 3 1	7
M O1 5- 29	2 2 0	4 6 2	0 . 4 8	0.05 600	0. 00 39 3	0.05 080	0. 00 17 7	0.39 223	0. 02 51 5		452	8 2	319	1 1	336	1 8	5.3 3%	3 1 9	1 1
M O1 5- 30	1 1 8	9 7 2	1 . 2 2	0.11 749	0. 00 22 2	0.25 953	0. 00 51 4	4.20 363	0. 07 13 6		183 7	5 8	147 8	2 7	163 2	2 0	24. 29 %		
M O1 5- 31	8 4 2	2 2 2	0 . 3 8	0.05 970	0. 00 16 5	0.07 905	0. 00 16 1	0.65 064	0. 01 63 4		593	2 5	490	1 0	509	1 0	3.8 8%	4 9 0	1 0
M O1 5- 32	1 7 0	4 5 6	0 . 3 7	0.05 202	0. 00 13 4	0.05 452	0. 00 10 5	0.39 095	0. 00 91 9		286	2 4	342	6	335	7	- 2.0 5%	3 4 2	6
M O1 5- 33	5 4 4	1 9 2	0 . 2 8	0.05 759	0. 00 20 2	0.08 624	0. 00 19 4	0.68 467	0. 02 19 9		514	3 5	533	1 2	530	1 3	- 0.5 6%	5 3 3	1 2
M O1	1 0	2 3	0 .	0.05 673	0. 00	0.05 423	0. 00	0.42 407	0. 01		481	3 3	340	7	359	9	5.5 9%	3 4	7

5-34	7	6	4		19		11		29								0	
M O1 5-35	101	272	037	0.05457	0.00179	0.05524	0.00118	0.41556	0.01247		3953	347	7	353	9		1.73%	347
M O1 5-36	63	104	0.6	0.06022	0.00213	0.09831	0.00224	0.81614	0.02647		61134	604	13	606	15		0.33%	604
M O1 5-37	65	154	0.42	0.10506	0.00199	0.18987	0.00368	2.75007	0.04626		1636	52	1115	20	1306	14	46.73%	
M O1 5-38	77	189	0.41	0.05824	0.00241	0.05600	0.00134	0.44961	0.01704		53943	351	8	377	12		7.41%	351
M O1 5-39	80	29	2.78	0.05679	0.00600	0.07633	0.00339	0.59760	0.05926		483142	474	20	476	38		0.42%	474
M O1 5-40	26	65	0.40	0.05748	0.00353	0.08475	0.00266	0.67154	0.03807		51071	524	16	522	23		-0.38%	524
M O1 5-41	150	186	0.81	0.05906	0.00185	0.07871	0.00168	0.64076	0.01838		56930	488	10	503	11		3.07%	488
M O1 5-42	50	116	0.43	0.06068	0.00232	0.08977	0.00210	0.75093	0.02636		62838	554	12	569	15		2.71%	554
M O1 5-43	47	72	0.65	0.05990	0.00297	0.08833	0.00239	0.72937	0.03333		60054	546	14	556	20		1.83%	546
M O1 5-44	42	75	0.56	0.13443	0.00298	0.38612	0.00866	7.15529	0.14729		2157	17	2105	40	2131	18	2.47%	215
M O1 5-45	32	61	0.53	0.05807	0.00322	0.10362	0.00293	0.82953	0.04291		53265	636	17	613	24		-3.62%	636
M O1 5-46	55	30	1.83	0.11928	0.00419	0.34747	0.01011	5.71346	0.18668		1945	26	1923	48	1933	28	1.14%	194
M O1 5-47	27	43	0.63	0.13381	0.00325	0.38061	0.00895	7.02050	0.15826		2149	18	2079	42	2114	20	3.37%	214

M O1 5- 48	1 3 8	2 6 7	0 . 5 2	0.05 720	0. 00 21 4	0.07 486	0. 00 17 2	0.59 030	0. 02 02 9	499	3 8	465	1 0	471	1 3	1.2 9%	4 6 5	1 0
M O1 5- 49	4 1	1 0 4	0 . 3 9	0.06 861	0. 00 29 1	0.07 342	0. 00 18 9	0.69 446	0. 02 66 2	887	4 0	457	1 1	535	1 6	17. 07 %		
M O1 5- 50	1 4 0	1 9 0	0 . 7 4	0.05 426	0. 00 23 1	0.06 067	0. 00 14 5	0.45 383	0. 01 78 6	382	4 8	380	9	380	1 2	0.0 0%	3 8 0	9
M O1 5- 51	5 7	7 0	0 . 8 1	0.05 964	0. 00 38 9	0.09 243	0. 00 31 4	0.75 991	0. 04 54 8	591	7 3	570	1 9	574	2 6	0.7 0%	5 7 0	1 9
M O1 5- 52	3 3	6 5	0 . 5 1	0.13 010	0. 00 27 4	0.37 915	0. 00 82 2	6.79 973	0. 13 23 6	209 9	1 7	207 2	3 8	208 6	1 7	1.3 0%	2 0 9 9	1 7
M O1 5- 53	7 7	1 7 5	0 . 4 4	0.06 013	0. 00 21 9	0.07 655	0. 00 17 5	0.63 453	0. 02 11 9	608	3 6	475	1 0	499	1 3	5.0 5%	4 7 5	1 0
M O1 5- 54	1 7 5	2 3 5	0 . 7 5	0.05 953	0. 00 19 9	0.09 346	0. 00 20 8	0.76 695	0. 02 34 0	587	3 2	576	1 2	578	1 3	0.3 5%	5 7 6	1 2
M O1 5- 55	5 4	1 4 0	0 . 3 9	0.05 964	0. 00 24 2	0.09 595	0. 00 23 6	0.78 875	0. 02 94 0	591	4 1	591	1 4	590	1 7	- 0.1 7%	5 9 1	1 4
M O1 5- 56	4 7	1 5 0	0 . 3 2	0.05 740	0. 00 25 9	0.07 816	0. 00 20 1	0.61 844	0. 02 56 0	507	4 8	485	1 2	489	1 6	0.8 2%	4 8 5	1 2
M O1 5- 57	5 0	1 7 6	0 . 2 8	0.06 743	0. 00 22 7	0.11 514	0. 00 26 5	1.07 025	0. 03 27 5	851	3 0	703	1 5	739	1 6	5.1 2%	7 0 3	1 5
M O1 5- 58	7 1	1 4 9	0 . 4 7	0.05 773	0. 00 35 3	0.05 601	0. 00 17 2	0.44 568	0. 02 50 8	520	7 1	351	1 0	374	1 8	6.5 5%	3 5 1	1 0
M O1 5- 59	5 5	1 4 1	0 . 3 9	0.05 760	0. 00 24 2	0.07 402	0. 00 17 7	0.58 771	0. 02 28 7	515	4 6	460	1 1	469	1 5	1.9 6%	4 6 0	1 1
M O1 5- 60	1 3 5	2 9 4	0 . 4 6	0.05 545	0. 00 19 6	0.05 289	0. 00 11 4	0.40 425	0. 01 32 3	430	3 7	332	7	345	1 0	3.9 2%	3 3 2	7
M O1	1 6	1 8	0 .	0.06 105	0. 00	0.10 641	0. 00	0.89 551	0. 03	641	3 6	652	1 5	649	1 6	- 0.4	6 5	1 5

5-61	2	0	9		22		25		07								6%	2	
M O1 5-62	27	46	059	0.05604	0.00618	0.07562	0.00343	0.58416	0.06056		454	151	470	21	467	39	-0.64%	470	21
M O1 5-63	64	236	027	0.05976	0.00212	0.07279	0.00162	0.59956	0.01956		595	35	453	10	477	12	5.30%	453	10
M O1 5-64	282	4158	068	0.05546	0.00203	0.05129	0.00112	0.39210	0.01323		431	39	322	7	336	10	4.35%	322	7
M O1 5-65	42	85	049	0.05862	0.00289	0.08291	0.00217	0.66991	0.03061		553	56	513	13	521	19	1.56%	513	13
M O1 5-66	165	1481	11	0.11349	0.00264	0.30819	0.00677	4.82114	0.10285		1856	18	1732	33	1789	18	7.16%	1732	18
M O1 5-67	122	266	046	0.05689	0.00182	0.05420	0.00115	0.42502	0.01243		487	31	340	7	360	9	5.88%	340	7
M O1 5-68	0	57	01	0.05383	0.00523	0.05012	0.00208	0.37188	0.03366		364	130	315	13	321	25	1.90%	315	13
M O1 5-69	73	113	065	0.05992	0.00257	0.08592	0.00217	0.70969	0.02793		601	44	531	13	545	17	2.64%	531	13
M O1 5-70	68	129	052	0.16867	0.00283	0.45897	0.00928	10.67105	0.16671		2544	16	2435	41	2495	15	4.48%	2435	16
M O1 5-71	124	2674	046	0.05441	0.00181	0.05516	0.00117	0.41364	0.01263		388	34	346	7	351	9	1.45%	346	7
M O1 5-72	19	328	036	0.05386	0.00163	0.05404	0.00111	0.40118	0.01114		365	30	339	7	343	8	1.18%	339	7
M O1 5-73	46	188	025	0.19297	0.00273	0.52814	0.00005	14.04772	0.18550		2768	15	2734	42	2753	13	1.24%	2734	15
M O1 5-74	122	1976	02	0.17927	0.00238	0.49823	0.00913	12.31142	0.14996		2646	15	2606	39	2628	11	1.53%	2606	15

M O1 5- 75	8 5 7	2 2 7	0 . 3 7	0.05 621	0. 00 17 6	0.07 392	0. 00 15 3	0.57 269	0. 01 64 9	461	3 1	460	9	460	1 1	0.0 0%	4 6 0	9
M O1 5- 76	8 6 6	3 2 6	0 . 2 6	0.05 936	0. 00 15 2	0.09 433	0. 00 18 6	0.77 181	0. 01 80 6	580	2 3	581	1 1	581	1 0	0.0 0%	5 8 1	1
M O1 5- 77	2 0 6	6 5 5	0 . 3 2	0.05 686	0. 00 11 2	0.07 880	0. 00 14 4	0.61 759	0. 01 10 6	486	1 8	489	9	488	7	- 0.2 0%	4 8 9	9
M O1 5- 78	6 9 2	3 5 2	0 . 2 0	0.05 831	0. 00 14 9	0.07 957	0. 00 15 7	0.63 949	0. 01 49 1	541	2 3	494	9	502	9	1.6 2%	4 9 4	9
M O1 5- 79	1 1 1	2 9 2	0 . 3 8	0.05 552	0. 00 15 8	0.07 181	0. 00 14 6	0.54 954	0. 01 43 0	433	2 7	447	9	445	9	- 0.4 5%	4 4 7	9
M O1 5- 80	4 7 1	1 0 1	0 . 4 7	0.07 097	0. 00 21 1	0.14 757	0. 00 32 3	1.44 360	0. 03 91 2	957	2 5	887	1 8	907	1 6	2.2 5%	8 8 7	1 8
M O1 5- 81	1 0 0	2 9 8	0 . 3 3	0.05 475	0. 00 17 9	0.05 430	0. 00 11 5	0.40 975	0. 01 23 0	402	3 3	341	7	349	9	2.3 5%	3 4 1	7
M O1 5- 82	4 8 9	1 0 9	0 . 4 4	0.21 746	0. 00 32 5	0.55 919	0. 01 10 7	16.7 610 0	0. 23 66 3	296 2	1 5	286 3	4 6	292 1	1 4	3.4 6%	2 9 6 2	1 5
M O1 5- 83	4 6 6	8 3 5	0 . 5 6	0.07 745	0. 00 22 7	0.19 582	0. 00 43 5	2.09 040	0. 05 61 3	113 3	2 4	115 3	2 3	114 6	1 8	- 1.7 3%	1 1 3 3	2 4
M O1 5- 84	3 4 4	4 4 7	0 . 7 6	0.06 173	0. 00 43 2	0.08 907	0. 00 29 8	0.75 793	0. 04 93 2	665	8 3	550	1 8	573	2 8	4.1 8%	5 5 0	1 8
M O1 5- 85	3 7 9	2 1 1	0 . 1 7	0.05 997	0. 00 16 0	0.10 374	0. 00 20 8	0.85 747	0. 02 09 3	602	2 4	636	1 2	629	1 1	- 1.1 0%	6 3 6	1 2
M O1 5- 86	6 0 7	3 1 7	0 . 1 9	0.05 809	0. 00 14 8	0.07 990	0. 00 15 7	0.63 972	0. 01 48 0	533	2 3	496	9	502	9	1.2 1%	4 9 6	9
M O1 5- 87	1 7 7	1 8 7	0 . 0 9	0.06 085	0. 00 19 3	0.09 130	0. 00 19 6	0.76 578	0. 02 22 7	634	3 0	563	1 2	577	1 3	2.4 9%	5 6 3	1 2
M O1	5 8	8 3	0 .	0.05 523	0. 00	0.05 309	0. 00	0.40 417	0. 00	422	1 9	333	6	345	6	3.6 0%	3 3	6

5-88	7	1	7		11		09		76									3	
M O1 5-89	33	23	01	0.06101	0.00176	0.08631	0.00177	0.72584	0.01919		640	26	534	11	554	11		3.75%	534
M O1 5-90	72	115	0163	0.13005	0.00238	0.38124	0.00771	6.83418	0.11535		2099	16	2082	36	2090	15		0.82%	2099
M O1 5-91	37	208	0188	0.06375	0.00163	0.11537	0.00232	1.01378	0.02360		733	22	704	13	711	12		0.99%	704
M O1 5-92	63	442	0144	0.07277	0.00119	0.16697	0.00299	1.67479	0.02458		1008	16	995	17	999	9		0.40%	999
M O1 5-93	101	217	0146	0.12855	0.00209	0.34922	0.00667	6.18800	0.09153		2078	16	1931	32	2003	13		7.61%	2003
M O1 5-94	127	83	1152	0.06329	0.00330	0.08799	0.00252	0.76757	0.03668		718	55	544	15	578	21		6.25%	544
M O1 5-95	120	500	0121	0.05804	0.00145	0.06947	0.00135	0.55575	0.01262		531	22	433	8	449	8		3.70%	433
M O1 5-96	25	92	0128	0.07048	0.00429	0.07184	0.00225	0.69791	0.03901		879	140	446	13	524	24		17.49%	
M O1 5-97	62	337	0188	0.07641	0.00165	0.11533	0.00223	1.21473	0.02353		1065	57	702	13	795	11		13.25%	
M O1 5-98	237	394	0160	0.06250	0.00145	0.09864	0.00190	0.84982	0.01795		691	20	606	11	625	10		3.14%	606
M O1 5-99	55	81	0168	0.06461	0.00333	0.08771	0.00247	0.78117	0.03704		762	54	542	15	586	21		8.12%	542
M O1 5-100	289	402	0172	0.05848	0.00222	0.06580	0.00154	0.53043	0.01837		548	38	411	9	432	12		5.11%	411
M O1	32	89	01	0.05633	0.00	0.07724	0.00	0.60006	0.01		465	19	480	9	477	7		-0.6	480

6-01	7	2	3 7		11 0		14 8		07 3								2%	0		
M O1 6-02	2 4 6	4 4 1	0 . 5 6	0.11 950	0. 00 19 9	0.32 161	0. 00 64 2	5.30 018	0. 08 15 6		194 9	1 7	179 8	3 1	186 9	1 3		8.4 0%	1 9 4 9	1 7
M O1 6-03	2 9 6	6 3 2	0 . 4 7	0.05 871	0. 00 15 8	0.07 375	0. 00 15 3	0.59 712	0. 01 47 9		556	2 4	459	9	475	9		3.4 9%	4 5 9	9
M O1 6-04	3 4 8	2 8 0	1 . 2 4	0.11 592	0. 00 22 5	0.31 088	0. 00 65 4	4.96 976	0. 08 88 7		189 4	1 7	174 5	3 2	181 4	1 5		8.5 4%	1 8 9 4	1 7
M O1 6-05	5 9	1 7 9	0 . 3 3	0.05 635	0. 00 23 6	0.07 938	0. 00 19 6	0.61 689	0. 02 38 9		466	4 5	492	1 2	488	1 5		- 0.8 1%	4 9 2	1 2
M O1 6-06	4 4	8 1	0 . 5 3	0.12 734	0. 00 30 6	0.25 981	0. 00 60 0	4.56 252	0. 09 90 8		204 1	6 0	148 6	3 0	173 1	2 0		37. 35 %		
M O1 6-07	5 0	1 5 0	0 . 3 4	0.06 148	0. 00 28 7	0.08 283	0. 00 22 8	0.70 220	0. 02 99 7		656	4 7	513	1 4	540	1 8		5.2 6%	5 1 3	1 4
M O1 6-08	7 0	3 0 2	0 . 2 3	0.05 573	0. 00 23 9	0.05 304	0. 00 12 9	0.40 768	0. 01 62 5		442	4 7	333	8	347	1 2		4.2 0%	3 3 3	8
M O1 6-09	9 7	5 5 0	0 . 1 8	0.06 362	0. 00 15 9	0.08 080	0. 00 16 7	0.70 888	0. 01 61 6		729	2 2	501	1 0	544	1 0		8.5 8%	5 0 1	1 0
M O1 6-10	1 6 5	2 5 9	0 . 6 4	0.13 354	0. 00 23 3	0.39 523	0. 00 81 7	7.27 841	0. 11 85 1		214 5	1 7	214 7	3 8	214 6	1 5		- 0.0 9%	2 1 4 5	1 7
M O1 6-11	1 5	9 6	0 . 1 6	0.06 111	0. 00 33 1	0.08 135	0. 00 23 3	0.68 551	0. 03 44 3		599	1 2 8	503	1 4	521	2 1		3.5 8%	5 0 3	1 4
M O1 6-12	1 3 9	6 4 1	0 . 2 2	0.05 322	0. 00 14 0	0.05 252	0. 00 10 7	0.38 538	0. 00 93 7		338	2 5	330	7	331	7		0.3 0%	3 3 0	7
M O1 6-13	9 0	8 8	1 . 0 3	0.06 215	0. 00 27 7	0.10 817	0. 00 29 0	0.92 705	0. 03 80 3		679	4 5	662	1 7	666	2 0		0.6 0%	6 6 2	1 7
M O1 6-14	5 0	6 8	0 . 7 4	0.05 831	0. 00 41 6	0.07 793	0. 00 24 4	0.62 670	0. 04 22 5		541	9 3	484	1 5	494	2 6		2.0 7%	4 8 4	1 5

M O1 6- 15	1 9 8	4 7 7	0 . 4 2	0.05 428	0. 00 15 3	0.05 790	0. 00 12 1	0.43 339	0. 01 12 7	383	2 7	363	7	366	8	0.8 3%	3 6 3	7
M O1 6- 16	5 1	3 8	0 . 1 5	0.05 985	0. 00 14 5	0.08 701	0. 00 17 7	0.71 816	0. 01 60 2	598	2 2	538	1 0	550	9	2.2 3%	5 3 8	1 0
M O1 6- 17	1 0 4	2 7 8	0 . 3 7	0.06 073	0. 00 14 7	0.10 131	0. 00 20 5	0.84 841	0. 01 90 1	630	2 2	622	1 2	624	1 0	0.3 2%	6 2 2	1 2
M O1 6- 18	1 3 8	1 0 5	1 . 3 1	0.06 843	0. 00 36 8	0.10 915	0. 00 33 8	1.02 998	0. 05 07 4	882	5 4	668	2 0	719	2 5	7.6 3%	6 6 8	2 0
M O1 6- 19	9 5	2 5 2	0 . 3 8	0.08 230	0. 00 18 6	0.20 533	0. 00 43 2	2.33 038	0. 04 83 6	125 3	1 9	120 4	2 3	122 2	1 5	4.0 7%	1 2 5 3	1 9
M O1 6- 20	7 4	2 5 2	0 . 2 9	0.06 107	0. 00 19 6	0.07 425	0. 00 16 6	0.62 529	0. 01 84 0	642	3 0	462	1 0	493	1 1	6.7 1%	4 6 2	1 0
M O1 6- 21	1 7 1	2 4 4	0 . 7 0	0.06 012	0. 00 22 0	0.07 530	0. 00 17 7	0.62 421	0. 02 10 4	608	3 6	468	1 1	492	1 3	5.1 3%	4 6 8	1 1
M O1 6- 22	1 1 1	3 7 4	0 . 3 0	0.05 898	0. 00 16 2	0.07 748	0. 00 16 1	0.63 009	0. 01 59 9	566	2 5	481	1 0	496	1 0	3.1 2%	4 8 1	1 0
M O1 6- 23	3 8	1 2 4	0 . 3 1	0.05 660	0. 00 26 8	0.08 109	0. 00 21 1	0.63 282	0. 02 79 3	476	5 3	503	1 3	498	1 7	- 0.9 9%	5 0 3	1 3
M O1 6- 24	1 4 9	2 8 8	0 . 6 5	0.11 913	0. 00 19 0	0.33 163	0. 00 65 0	5.44 770	0. 08 03 2	194 3	1 7	184 6	3 1	189 2	1 3	5.2 5%	1 9 4 3	1 7
M O1 6- 25	1 5	4 1	0 . 3 7	0.05 904	0. 00 50 1	0.08 152	0. 00 28 9	0.66 368	0. 05 32 7	569	1 1 3	505	1 7	517	3 3	2.3 8%	5 0 5	1 7
M O1 6- 26	4 6	6 8	0 . 6 8	0.06 485	0. 00 40 2	0.09 115	0. 00 28 4	0.81 511	0. 04 69 9	769	7 0	562	1 7	605	2 6	7.6 5%	5 6 2	1 7
M O1 6- 27	6 8	1 6 5	0 . 4 1	0.05 977	0. 00 25 1	0.07 871	0. 00 19 7	0.64 865	0. 02 51 5	595	4 3	488	1 2	508	1 5	4.1 0%	4 8 8	1 2
M O1	1 3	2 5	0 . .	0.06 949	0. 00	0.15 214	0. 00	1.45 787	0. 03	913	2 2	913	1 8	913	1 4	0.0 0%	9 1	1 8

6-28	3	6	5		17		32		44								3	
M O1 6-29	7 1	1 1	0 6	0.11 540	0. 00 26 4	0.31 383	0. 00 70 6	4.99 341	0. 10 53 9		188 6	1 8	176 0	3 5	181 8	1 8	7.1 6%	1 8 8 6
M O1 6-30	2 1	1 7	1 2	0.06 243	0. 00 21 6	0.10 083	0. 00 23 3	0.86 805	0. 02 77 6		689	3 3	619	1 4	635	1 5	2.5 8%	6 1 9
M O1 6-31	7 2	2 0	0 3	0.06 264	0. 00 22 1	0.09 140	0. 00 21 3	0.78 934	0. 02 56 4		696	3 3	564	1 3	591	1 5	4.7 9%	
M O1 6-32	1 9 8	1 5 3	0 1 3	0.05 393	0. 00 10 2	0.05 697	0. 00 10 7	0.42 360	0. 00 73 9		368	1 9	357	7	359	5	0.5 6%	3 5 7
M O1 6-33	8 7	2 5	0 3	0.13 195	0. 00 20 7	0.36 823	0. 00 72 5	6.69 925	0. 09 74 8		212 4	1 6	202 1	3 4	207 3	1 3	5.1 0%	2 1 2 4
M O1 6-34	7 7	1 6	0 4	0.05 372	0. 00 30 5	0.05 861	0. 00 16 0	0.43 408	0. 02 31 4		359	7 2	367	1 0	366	1 6	- 0.2 7%	3 6 7
M O1 6-35	3 4 1	7 9	0 4	0.05 595	0. 00 16 1	0.07 309	0. 00 15 4	0.56 386	0. 01 49 8		450	2 7	455	9	454	1 0	- 0.2 2%	4 5 5
M O1 6-36	4 0 3	8 7	0 4	0.05 938	0. 00 12 1	0.07 475	0. 00 14 4	0.61 199	0. 01 13 8		581	1 9	465	9	485	7	4.3 0%	4 6 5
M O1 6-37	6 7	2 1	0 3	0.05 591	0. 00 21 5	0.08 742	0. 00 20 6	0.67 395	0. 02 39 9		449	4 0	540	1 2	523	1 5	- 3.1 5%	5 4 0
M O1 6-38	6 4	1 9	0 3	0.06 137	0. 00 23 9	0.08 951	0. 00 21 7	0.75 740	0. 02 72 3		652	3 9	553	1 3	573	1 6	3.6 2%	
M O1 6-39	7 3	1 8	0 3	0.05 416	0. 00 28 3	0.05 432	0. 00 14 7	0.40 566	0. 01 96 8		378	6 2	341	9	346	1 4	1.4 7%	3 4 1
M O1 6-40	1 2 5	2 4	0 5	0.05 820	0. 00 23 6	0.05 549	0. 00 13 4	0.44 529	0. 01 66 6		537	4 2	348	8	374	1 2	7.4 7%	3 4 8
M O1 6-41	4 3	1 8	0 2	0.05 582	0. 00 25 6	0.07 452	0. 00 18 6	0.57 358	0. 02 45 7		445	5 3	463	1 1	460	1 6	- 0.6 5%	4 6 3

M O1 6- 42	1 1 4	7 5 1	1 . 5 1	0.06 745	0. 00 46 7	0.06 186	0. 00 21 1	0.57 530	0. 03 66 8		852	7 7	387	1 3	461	2 4	19. 12 %		
M O1 6- 43	1 2 3	2 4 0	0 . 5 1	0.05 518	0. 00 22 5	0.05 516	0. 00 13 1	0.41 969	0. 01 58 7		420	4 4	346	8	356	1 1	2.8 9%	3 4 6	8
M O1 6- 44	3 4	2 9 2	0 . 1 2	0.15 098	0. 00 22 4	0.23 855	0. 00 45 8	4.96 558	0. 06 60 2		232 6	4 0	137 4	2 3	179 5	1 1	69. 29 %		
M O1 6- 45	5 5	2 2 6	0 . 2 4	0.05 834	0. 00 18 7	0.07 382	0. 00 16 3	0.59 378	0. 01 75 4		543	3 1	459	1 0	473	1 1	3.0 5%	4 5 9	1 0
M O1 6- 46	1 7 4	2 9 3	0 . 5 9	0.06 077	0. 00 20 6	0.09 244	0. 00 21 4	0.77 447	0. 02 40 5		631	3 2	570	1 3	582	1 4	2.1 1%	5 7 0	1 3
M O1 6- 47	2 0 4	2 5 6	0 . 8 0	0.05 971	0. 00 15 5	0.09 810	0. 00 20 3	0.80 762	0. 01 92 8		593	2 3	603	1 2	601	1 1	- 0.3 3%	6 0 3	1 2
M O1 6- 48	1 1 1	1 2 9	0 . 8 6	0.10 533	0. 00 18 6	0.27 986	0. 00 55 7	4.06 427	0. 06 59 5		172 0	1 7	159 1	2 8	164 7	1 3	8.1 1%	1 7 2 0	1 7
M O1 6- 49	0	1 4	0 . 0 3	0.06 578	0. 01 14 7	0.05 356	0. 00 31 5	0.48 575	0. 08 08 7		799	2 5 6	336	1 9	402	5 5	19. 64 %		
M O1 6- 50	6 9	9 0	0 . 7 7	0.12 530	0. 00 33 0	0.30 359	0. 00 73 9	5.24 459	0. 12 63 1		203 3	2 0	170 9	3 7	186 0	2 1	18. 96 %		
M O1 6- 51	7 0	7 6	0 . 9 3	0.13 393	0. 00 29 8	0.37 241	0. 00 85 2	6.87 654	0. 14 20 5		215 0	1 8	204 1	4 0	209 6	1 8	5.3 4%	2 1 5 0	1 8
M O1 6- 52	1 4 0	2 6 2	0 . 5 3	0.05 393	0. 00 18 8	0.05 414	0. 00 12 1	0.40 249	0. 01 30 0		368	3 6	340	7	343	9	0.8 8%	3 4 0	7
M O1 6- 53	1	2 4 1	0 . 0 0	0.06 237	0. 00 17 4	0.11 147	0. 00 23 9	0.95 846	0. 02 44 9		687	2 5	681	1 4	682	1 3	0.1 5%	6 8 1	1 4
M O1 6- 54	4 4	1 4 6	0 . 3 0	0.14 032	0. 00 24 9	0.24 782	0. 00 50 2	4.79 411	0. 07 63 1		222 2	4 6	142 6	2 5	177 9	1 4	55. 82 %		
M O1	1 0	2 0	0 .	0.06 238	0. 00	0.09 992	0. 00	0.85 929	0. 02		687	3 0	614	1 3	630	1 4	2.6 1%	6 1	1 3

6-55	9	5	5		20		22		56								4	
M O1 6-56	89	237	0.37	0.05979	0.00210	0.07533	0.00174	0.62093	0.02007		596	34	468	10	490	13	4.70%	468
M O1 6-57	65	94	0.69	0.06746	0.00288	0.12554	0.00337	1.16765	0.04565		852	40	762	19	786	21	3.15%	762
M O1 6-58	96	169	0.57	0.05637	0.00280	0.06920	0.00179	0.53778	0.02503		467	59	431	11	437	17	1.39%	431
M O1 6-59	107	258	0.41	0.23329	0.00319	0.55014	0.01079	17.69393	0.22887		3075	16	2826	45	2973	12	8.81%	3075
M O1 6-60	34	254	0.13	0.05927	0.00191	0.07467	0.00165	0.61014	0.01807		577	30	464	10	484	11	4.31%	464
M O1 6-61	35	76	0.47	0.21613	0.00384	0.54074	0.01198	16.11155	0.27373		2952	17	2787	50	2883	16	5.92%	2952
M O1 6-62	283	235	1.21	0.06492	0.00184	0.09969	0.00213	0.89220	0.02317		772	25	613	12	648	12	5.71%	613
M O1 6-63	103	294	0.54	0.06323	0.00312	0.08177	0.00235	0.71278	0.03204		716	50	507	14	546	19	7.69%	507
M O1 6-64	69	230	0.30	0.12364	0.00224	0.33685	0.00690	5.74132	0.09582		2009	17	1871	33	1938	14	7.38%	2009
M O1 6-65	106	212	0.50	0.05971	0.00190	0.09211	0.00203	0.75825	0.02224		593	30	568	12	573	13	0.88%	568
M O1 6-66	106	691	0.17	0.05625	0.00131	0.07408	0.00146	0.57449	0.01234		462	21	461	9	461	8	0.00%	461
M O1 6-67	115	172	0.67	0.06313	0.00287	0.09805	0.00267	0.85328	0.03551		713	45	603	16	626	19	3.81%	603
M O1 6-68	93	110	0.85	0.06094	0.00273	0.09254	0.00243	0.77745	0.03214		637	46	571	14	584	18	2.28%	571

M O1 6- 69	5 7	9 1	0 . 6 3	0.06 001	0. 00 32 2	0.10 071	0. 00 28 9	0.83 316	0. 04 16 2		604	6 0	619	1 7	615	2 3	- 0.6 5%	6 1 9	1 7
M O1 6- 70	2 2 1	3 4 1	0 . 6 5	0.06 078	0. 00 13 5	0.10 070	0. 00 19 8	0.84 380	0. 01 72 3		631	2 0	619	1 2	621	9	0.3 2%	6 1 9	1 2
M O1 6- 71	1 4 3	3 3 6	0 . 4 3	0.06 770	0. 00 19 4	0.14 030	0. 00 30 9	1.30 939	0. 03 43 1		859	2 4	846	1 7	850	1 5	0.4 7%	8 4 6	1 7
M O1 6- 72	1 9 9	3 3 9	0 . 5 9	0.11 556	0. 00 25 7	0.31 445	0. 00 69 6	5.00 915	0. 10 23 6		188 9	1 8	176	3 4	182 1	1 7	7.1 5%	1 8 8 9	1 8
M O1 6- 73	7 0	7 3	0 . 9 6	0.13 037	0. 00 39 7	0.36 174	0. 00 99 0	6.50 117	0. 18 36 1		210 3	2 2	199	4 7	204 6	2 5	5.6 8%	2 1 0 3	2 2
M O1 6- 74	5 9	9 6	0 . 6 2	0.19 092	0. 00 29 7	0.51 041	0. 01 03 9	13.4 334 5	0. 19 70 9		275 0	1 6	265	4 4	271 1	1 4	3.4 6%	2 7 5 0	1 6
M O1 6- 75	8 0	1 5 0	0 . 5 3	0.05 825	0. 00 26 4	0.09 242	0. 00 23 1	0.74 213	0. 03 14 8		539	5 1	570	1 4	564	1 8	- 1.0 5%	5 7 0	1 4
M O1 6- 76	5 3	9 5	0 . 5 6	0.06 960	0. 00 26 7	0.13 616	0. 00 34 7	1.30 640	0. 04 59 5		917	3 5	823	2 0	849	2 0	3.1 6%	8 2 3	2 0
M O1 6- 77	3 8	1 2 2	0 . 3 1	0.06 475	0. 00 25 9	0.10 202	0. 00 25 7	0.91 066	0. 03 34 1		766	3 8	626	1 5	657	1 8	4.9 5%	6 2 6	1 5
M O1 6- 78	1 0 7	2 0 0	0 . 5 4	0.12 710	0. 00 21 1	0.25 438	0. 00 49 9	4.45 685	0. 06 67 7		200 7	4 7	145	2 5	169 5	1 4	38. 03 %		
M O1 6- 79	1 1 4	3 1 0	0 . 3 7	0.05 450	0. 00 17 2	0.05 695	0. 00 12 2	0.42 786	0. 01 24 4		392	3 1	357	7	362	9	1.4 0%	3 5 7	7
M O1 6- 80	4 1 6	5 4 3	0 . 7 7	0.05 497	0. 00 13 6	0.05 563	0. 00 11 1	0.42 151	0. 00 95 5		411	2 3	349	7	357	7	2.2 9%	3 4 9	7
M O1 6- 81	2 7	2 7 6	0 . 1 0	0.12 366	0. 00 19 4	0.30 926	0. 00 59 8	5.27 170	0. 07 57 9		199 5	4 3	173	2 9	185 6	1 2	14. 99 %		
M O1	1 7	1 3	1 .	0.06 321	0. 00	0.09 286	0. 00	0.80 905	0. 02		715	3 6	572	1 3	602	1 6	5.2 4%	5 7	1 3

6-82	8	1	3		24		22		81								2	
M O1 6-83	41	30	0.1	0.05932	0.00157	0.08226	0.00170	0.67262	0.01631		579	24	510	10	522	10	2.35%	510
M O1 6-84	54	14	0.4	0.05976	0.00100	0.07300	0.00134	0.60134	0.00923		595	18	454	8	478	6	5.29%	454
M O1 6-85	130	164	0.79	0.06036	0.00222	0.08590	0.00204	0.71469	0.02412		617	36	531	12	548	14	3.20%	531
M O1 6-86	60	139	0.43	0.05745	0.00225	0.08316	0.00200	0.65852	0.02372		509	40	515	12	514	15	-0.19%	515
M O1 6-87	73	279	0.26	0.05892	0.00180	0.08136	0.00177	0.66080	0.01851		564	28	504	11	515	11	2.18%	504
M O1 6-88	82	104	0.79	0.06191	0.00262	0.09984	0.00255	0.85207	0.03326		671	43	613	15	626	18	2.12%	613
M O1 6-89	167	305	0.55	0.06212	0.00156	0.09895	0.00203	0.84728	0.01952		678	22	608	12	623	11	2.47%	608
M O1 6-90	31	126	0.225	0.11420	0.00232	0.17606	0.00363	2.77147	0.05023		1790	52	1039	19	1312	14	72.28%	1039
M O1 6-91	29	18	0.25	0.05658	0.00235	0.07846	0.00189	0.61192	0.02361		475	45	487	11	485	15	-0.41%	487
M O1 6-92	102	203	0.39	0.05364	0.00199	0.05836	0.00132	0.43154	0.01488		356	40	366	8	364	11	-0.55%	366
M O1 6-93	60	89	0.81	0.06077	0.00109	0.09402	0.00175	0.78763	0.01293		631	18	579	10	590	7	1.90%	579
M O1 6-94	51	147	0.34	0.05491	0.00232	0.07224	0.00177	0.54676	0.02142		409	46	450	11	443	14	-1.56%	450
M O1 6-95	56	132	0.42	0.22288	0.00335	0.59355	0.01209	18.23467	0.02268		3002	16	3004	49	3002	14	-0.07%	3004

M O1 6- 96	4 3 9	1 4 9	0 . 2 9	0.05 719	0. 00 27 5	0.08 155	0. 00 21 6	0.64 289	0. 02 86 2		499	5 3	505	1 3	504	1 8	- 0.2 0%	5 0 5	1 3
M O1 6- 97	4 6 6	1 3 6	0 . 3 4	0.05 715	0. 00 33 0	0.07 306	0. 00 22 5	0.57 550	0. 03 04 4		497	6 4	455	1 4	462	2 0	1.5 4%	4 5 5	1 4
M O1 6- 98	4 9 8	2 4 8	0 . 2 0	0.12 369	0. 00 18 2	0.33 533	0. 00 63 4	5.71 698	0. 07 72 8		201 0	1 6	186 4	3 1	193 4	1 2	7.8 3%	2 0 1 0	1 6
M O1 6- 99	6 8 6	4 8 6	0 . 1 4	0.13 425	0. 00 16 9	0.36 671	0. 00 66 7	6.78 568	0. 07 82 8		215 4	1 7	201 4	3 1	208 4	1 0	6.9 5%	2 1 5 4	1 7
M O1 6- 10 0	1 5 5	1 7 4	0 . 8 9	0.06 698	0. 00 22 5	0.09 276	0. 00 21 5	0.85 635	0. 02 61 2		686	1 0 7	569	1 3	593	1 9	4.2 2%	5 6 9	1 3
M O1 7- 01	3 6 6	2 1 6	0 . 1 6	0.05 786	0. 00 09 8	0.07 333	0. 00 13 6	0.58 501	0. 00 91 7		524	1 8	456	8	468	6	2.6 3%	4 5 6	8
M O1 7- 02	9 1 2	3 9 2	0 . 2 3	0.18 762	0. 00 18 4	0.51 990	0. 00 92 2	13.4 482 7	0. 12 26 0		272 1	1 7	269 9	3 9	271 2	9	0.8 2%	2 7 2 1	1 7
M O1 7- 03	3 8 8	2 8 8	0 . 1 3	0.06 038	0. 00 09 0	0.07 882	0. 00 14 4	0.65 609	0. 00 89 6		617	1 9	489	9	512	5	4.7 0%	4 8 9	9
M O1 7- 04	5 5 6	5 2 6	1 . 0 6	0.06 203	0. 00 18 6	0.10 315	0. 00 22 3	0.88 219	0. 02 45 0		675	2 7	633	1 3	642	1 3	1.4 2%	6 3 3	1 3
M O1 7- 05	8 8 4	3 2 4	0 . 2 7	0.06 038	0. 00 12 0	0.09 313	0. 00 18 0	0.77 525	0. 01 42 1		617	1 9	574	1 1	583	8	1.5 7%	5 7 4	1 1
M O1 7- 06	1 3 5	2 5 2	0 . 5 2	0.07 247	0. 00 26 5	0.12 488	0. 00 28 7	1.24 773	0. 04 27 7		999	3 5	759	1 6	822	1 9	8.3 0%	7 5 9	1 6
M O1 7- 07	3 9 0	3 5 8	1 . 0 9	0.06 273	0. 00 08 4	0.10 360	0. 00 18 8	0.89 600	0. 01 09 9		699	1 9	635	1 1	650	6	2.3 6%	6 3 5	1 1
M O1 7- 08	6 8 1	3 4 1	0 . 2 0	0.14 083	0. 00 14 9	0.38 652	0. 00 69 3	7.50 483	0. 07 36 8		221 8	3 8	210 3	3 2	216 2	1 1	5.4 7%	2 2 1 8	3 8

M O1 7- 09	1 1 4	1 5 5	0 . 7 3	0.05 834	0. 00 18 1	0.09 586	0. 00 21 1	0.77 102	0. 02 21 0	543	2 9	590	1 2	580	1 3	- 1.6 9%	5 9 0	1 2
M O1 7- 10	1 6	5 0	0 . 3 2	0.05 387	0. 00 17 7	0.10 013	0. 00 20 9	0.74 361	0. 02 31 4	366	3 5	615	1 2	565	1 3	- 8.1 3%	6 1 5	1 2
M O1 7- 11	7 0	8 0	0 . 8 7	0.10 763	0. 00 13 9	0.29 890	0. 00 55 3	4.43 517	0. 05 29 1	176 0	1 7	168 6	2 7	171 9	1 0	4.3 9%	1 7 6 0	1 7
M O1 7- 12	4 3	1 5 1	0 . 2 8	0.05 861	0. 00 11 4	0.08 104	0. 00 15 4	0.65 492	0. 01 17 8	553	1 9	502	9	512	7	1.9 9%	5 0 2	9
M O1 7- 13	2 5	3 9	0 . 6 5	0.05 694	0. 00 22 7	0.07 707	0. 00 17 6	0.60 496	0. 02 27 5	489	4 5	479	1 1	480	1 4	0.2 1%	4 7 9	1 1
M O1 7- 14	2 0 5	1 9 0	1 . 0 8	0.06 213	0. 00 09 7	0.08 753	0. 00 16 2	0.74 974	0. 01 07 0	679	1 8	541	1 0	568	6	4.9 9%	5 4 1	1 0
M O1 7- 15	1 0 8	3 0 1	0 . 3 6	0.05 371	0. 00 08 8	0.05 713	0. 00 10 5	0.42 306	0. 00 63 6	359	1 9	358	6	358	5	0.0 0%	3 5 8	6
M O1 7- 16	3 4 9	4 1 7	0 . 8 4	0.06 245	0. 00 07 7	0.10 072	0. 00 18 1	0.86 729	0. 00 98 0	690	2 0	619	1 1	634	5	2.4 2%	6 1 9	1 1
M O1 7- 17	1 6 5	1 8 2	0 . 9 1	0.11 572	0. 00 12 6	0.32 403	0. 00 58 2	5.16 981	0. 05 21 4	189 1	1 8	180 9	2 8	184 8	9	4.5 3%	1 8 9 1	1 8
M O1 7- 18	2 3	3 4	0 . 6 8	0.06 141	0. 00 23 6	0.10 792	0. 00 24 6	0.91 365	0. 03 30 2	654	4 1	661	1 4	659	1 8	- 0.3 0%	6 6 1	1 4
M O1 7- 19	4 8	5 4	0 . 8 9	0.06 212	0. 00 16 2	0.10 691	0. 00 22 0	0.91 559	0. 02 21 6	678	2 3	655	1 3	660	1 2	0.7 6%	6 5 5	1 3
M O1 7- 20	4 3	2 4 2	0 . 1 8	0.12 334	0. 00 13 6	0.33 769	0. 00 60 8	5.74 215	0. 05 85 7	197 8	4 0	187 1	2 9	192 2	1 1	5.7 2%	1 9 7 8	4 0
M O1 7- 21	1 6 3	2 8 7	0 . 5 7	0.06 515	0. 00 09 2	0.10 046	0. 00 18 3	0.90 233	0. 01 17 3	779	1 9	617	1 1	653	6	5.8 3%	6 1 7	1 1
M O1	1 8	1 6	1 .	0.05 609	0. 00	0.07 511	0. 00	0.58 085	0. 01	456	1 9	467	9	465	7	- 0.4	4 6	9

7-22	0	1	1		10		14		01								3%	7	
M O1 7-23	192	342	0.56	0.12740	0.00128	0.36876	0.00653	6.47716	0.06033		2062	18	2024	31	2043	8	1.88%	2062	18
M O1 7-24	31	222	0.14	0.06166	0.00088	0.10099	0.00184	0.85858	0.01129		662	19	620	11	629	6	1.45%	6220	11
M O1 7-25	849	289	0.29	0.05296	0.00132	0.05456	0.00110	0.39838	0.00914		327	23	342	7	340	7	-0.58%	342	7
M O1 7-26	365	753	0.49	0.05460	0.00072	0.05277	0.00095	0.39728	0.00481		396	20	332	6	340	3	2.41%	332	6
M O1 7-27	3	24	0.12	0.05963	0.00258	0.09268	0.00222	0.76186	0.03103		590	48	571	13	575	18	0.70%	571	13
M O1 7-28	331	319	1.04	0.06206	0.00084	0.10373	0.00188	0.88752	0.01106		676	19	636	11	645	6	1.42%	636	11
M O1 7-29	230	90	0.26	0.18356	0.00197	0.51910	0.00939	13.13709	0.13127		2685	17	2695	40	2690	9	-0.37%	2685	17
M O1 7-30	274	340	0.08	0.05531	0.00086	0.07681	0.00140	0.58572	0.00841		425	19	477	8	468	5	-1.89%	477	8
M O1 7-31	157	240	0.66	0.05872	0.00093	0.08900	0.00164	0.72051	0.01058		557	18	550	10	551	6	0.18%	557	18
M O1 7-32	156	433	0.32	0.05937	0.00080	0.07691	0.00139	0.62955	0.00781		581	19	478	8	496	5	3.77%	478	8
M O1 7-33	185	254	0.73	0.05715	0.00094	0.08093	0.00150	0.63762	0.00962		497	19	502	9	501	6	-0.20%	502	9
M O1 7-34	103	312	0.33	0.09841	0.00109	0.26902	0.00481	3.64974	0.03722		1594	19	1536	24	1560	8	3.78%	1594	19
M O1 7-35	112	313	0.00	0.05728	0.00117	0.07758	0.00150	0.61267	0.01146		502	19	482	9	485	7	0.62%	482	9

M O1 7- 36	5 2 6	1 9 6	0 . 2 7	0.05 670	0. 00 15 0	0.07 568	0. 00 15 5	0.59 161	0. 01 44 5	480	2 4	470	9	472	9	0.4 3%	4 7 0	9
M O1 7- 37	1 3 2	3 3 5	0 . 3 9	0.05 736	0. 00 09 3	0.05 655	0. 00 10 4	0.44 719	0. 00 66 6	505	1 8	355	6	375	5	5.6 3%	3 5 5	6
M O1 7- 38	1 0 2	2 5 6	0 . 4 0	0.05 816	0. 00 09 1	0.08 242	0. 00 15 1	0.66 093	0. 00 95 2	536	1 8	511	9	515	6	0.7 8%	5 1 1	9
M O1 7- 39	1 7 8	3 8 6	0 . 4 6	0.05 338	0. 00 09 0	0.05 623	0. 00 10 4	0.41 376	0. 00 64 7	345	1 9	353	6	352	5	- 0.2 8%	3 5 3	6
M O1 7- 40	5 0 6	2 1 6	0 . 2 3	0.05 547	0. 00 09 4	0.08 274	0. 00 15 3	0.63 274	0. 00 99 2	431	1 9	512	9	498	6	- 2.7 3%	5 1 2	9
M O1 7- 41	3 5 6	2 7 6	0 . 1 3	0.06 419	0. 00 12 7	0.09 185	0. 00 17 8	0.81 281	0. 01 46 8	748	1 8	566	1 1	604	8	6.7 1%	5 6 6	1
M O1 7- 42	2 2 0	4 2 0	0 . 5 2	0.05 749	0. 00 10 1	0.05 677	0. 00 10 6	0.44 999	0. 00 72 3	510	1 8	356	6	377	5	5.9 0%	3 5 6	6
M O1 7- 43	7 8 6	2 0 6	0 . 3 8	0.05 825	0. 00 11 1	0.07 236	0. 00 13 7	0.58 107	0. 01 01 8	539	1 9	450	8	465	7	3.3 3%	4 5 0	8
M O1 7- 44	2 0 0	3 7 6	0 . 5 3	0.12 361	0. 00 12 6	0.36 984	0. 00 65 5	6.30 244	0. 05 90 4	200 9	1 8	202 9	3 1	201 9	8	- 0.9 9%	2 0 0 9	1 8
M O1 7- 45	6 2 1	3 8 1	0 . 1 6	0.05 987	0. 00 09 2	0.07 782	0. 00 14 3	0.64 231	0. 00 90 9	533	6 2	482	8	491	8	1.8 7%	4 8 2	8
M O1 7- 46	1 0 3	2 0 0	0 . 5 2	0.05 954	0. 00 10 6	0.09 215	0. 00 17 3	0.75 636	0. 01 23 7	587	1 8	568	1 0	572	7	0.7 0%	5 6 8	1 0
M O1 7- 47	7 5 5	1 8 4	0 . 4 1	0.05 625	0. 00 12 0	0.05 625	0. 00 10 9	0.43 619	0. 00 85 3	462	2 0	353	7	368	6	4.2 5%	3 5 3	7
M O1 7- 48	1 6 0	3 0 7	0 . 5 2	0.05 533	0. 00 09 6	0.05 592	0. 00 10 4	0.42 659	0. 00 67 6	426	1 9	351	6	361	5	2.8 5%	3 5 1	6
M O1	1 6	7 2	0 . .	0.05 857	0. 00	0.07 123	0. 00	0.57 513	0. 00	551	2 0	444	8	461	4	3.8 3%	4 4	8

7-49	9	3	2		07		12		68								4	
M O1 7-50	176	684	0.26	0.05876	0.00076	0.07624	0.00137	0.61764	0.00732		558	20	474	8	488	5	2.95%	474
M O1 7-51	46	105	0.44	0.05656	0.00128	0.08151	0.00160	0.63554	0.01334		474	21	505	10	500	8	-0.99%	500
M O1 7-52	139	361	0.38	0.06155	0.00090	0.07408	0.00135	0.62864	0.00840		659	19	461	8	495	5	7.38%	461
M O1 7-53	317	729	0.43	0.05408	0.00074	0.06058	0.00109	0.45163	0.00565		374	20	379	7	378	4	-0.26%	379
M O1 7-54	120	358	0.34	0.06343	0.00086	0.10336	0.00187	0.90393	0.01130		723	19	634	11	654	6	3.15%	634
M O1 7-55	55	115	0.48	0.05808	0.00148	0.07457	0.00150	0.59711	0.01410		533	23	464	9	475	9	2.37%	464
M O1 7-56	44	73	0.60	0.06054	0.00134	0.12282	0.00241	1.02504	0.02115		623	20	747	14	716	11	-4.15%	747
M O1 7-57	153	239	0.64	0.06039	0.00101	0.09693	0.00180	0.80694	0.01238		618	18	596	11	601	7	0.84%	596
M O1 7-58	37	49	0.75	0.05875	0.00235	0.08044	0.00186	0.65155	0.02437		558	43	499	11	509	15	2.00%	499
M O1 7-59	123	630	0.22	0.20660	0.00201	0.51569	0.00908	14.68812	0.01318		2879	16	2795	39	2680	9	3.01%	2795
M O1 7-60	293	749	0.39	0.05064	0.00085	0.05236	0.00096	0.36553	0.00572		224	19	329	6	316	4	-3.95%	329
M O1 7-61	203	207	0.98	0.06078	0.00097	0.09631	0.00177	0.80707	0.01187		631	18	593	10	601	7	1.35%	593
M O1 7-62	128	103	1.13	0.18311	0.00177	0.40288	0.00707	10.16995	0.09020		2461	59	2120	37	2298	25	16.08%	2120

M O1 7- 63	5 7	1 4 2	0 . 4 0	0.05 303	0. 00 18 3	0.05 227	0. 00 11 1	0.38 215	0. 01 23 8		330	3 8	328	7	329	9	0.3 0%	3 2 8	7
M O1 7- 64	4 0	6 6 1	0 . 0 6	0.05 942	0. 00 10 1	0.05 499	0. 00 10 2	0.45 049	0. 00 69 8		583	1 8	345	6	378	5	9.5 7%	3 4 5	6
M O1 7- 65	7 4	2 6 1	0 . 2 8	0.06 008	0. 00 09 4	0.07 574	0. 00 13 9	0.62 734	0. 00 90 2		606	1 8	471	8	494	6	4.8 8%	4 7 1	8
M O1 7- 66	6 2	4 6 6	0 . 1 3	0.07 621	0. 00 09 2	0.11 261	0. 00 20 1	1.18 309	0. 01 29 9		843	5 3	680	1 2	719	9	5.7 4%	6 8 0	1 2
M O1 7- 67	4 9	1 2 7	0 . 3 9	0.05 334	0. 00 15 1	0.05 579	0. 00 11 3	0.41 024	0. 01 08 0		343	2 8	350	7	349	8	- 0.2 9%	3 5 0	7
M O1 7- 68	5 4	1 3 7	0 . 3 9	0.05 866	0. 00 13 2	0.07 631	0. 00 14 8	0.61 708	0. 01 29 4		555	2 0	474	9	488	8	2.9 5%	4 7 4	9
M O1 7- 69	9	2 8	0 . 3 2	0.05 829	0. 00 47 7	0.06 531	0. 00 18 7	0.52 477	0. 04 14 8		541	1 2 3	408	1 1	428	2 8	4.9 0%	4 0 8	1 1
M O1 7- 70	1 7	2 2	0 . 7 9	0.06 276	0. 00 41 0	0.10 231	0. 00 28 8	0.88 515	0. 05 52 5		700	8 5	628	1 7	644	3 0	2.5 5%	6 2 8	1 7
M O1 7- 71	1 8 0	1 2 5	1 . 4 4	0.06 167	0. 00 15 1	0.09 248	0. 00 18 6	0.78 616	0. 01 77 2		663	2 2	570	1 1	589	1 0	3.3 3%	5 7 0	1 1
M O1 7- 72	6 4	9 1	0 . 7 0	0.05 964	0. 00 14 4	0.09 697	0. 00 19 2	0.79 726	0. 01 78 9		591	2 2	597	1 1	595	1 0	- 0.3 4%	5 9 7	1 1
M O1 7- 73	1 0 9	1 4 6	0 . 7 5	0.06 208	0. 00 10 3	0.10 220	0. 00 19 0	0.87 458	0. 01 33 8		677	1 8	627	1 1	638	7	1.7 5%	6 2 7	1 1
M O1 7- 74	1 8	3 5	0 . 5 1	0.05 610	0. 00 34 0	0.07 344	0. 00 21 4	0.56 793	0. 03 23 2		456	7 5	457	1 3	457	2 1	0.0 0%	4 5 7	1 3
M O1 7- 75	4 3	4 5	0 . 9 6	0.13 067	0. 00 18 8	0.37 661	0. 00 72 2	6.78 416	0. 09 02 7		210 7	1 7	206 0	3 4	208 4	1 2	2.2 8%	2 1 0 7	1 7
M O1	4 9	1 1	0 . .	0.18 588	0. 00	0.50 302	0. 00	12.8 903	0. 12		270 6	1 7	262 7	3 9	267 2	9	3.0 1%	2 7	1 7

7-76		1	4		19		90	4	59								0	
M O1 7-77	125	402	0.31	0.05904	0.00078	0.07473	0.00134	0.60825	0.00737		569	20	465	8	482	5	3.66%	465
M O1 7-78	32	44	0.72	0.15237	0.00203	0.41313	0.00783	8.67812	0.01706		2373	17	2229	36	2305	11	6.46%	2373
M O1 7-79	16	32	0.50	0.12469	0.00331	0.27962	0.00655	4.80648	0.01738		2024	19	1589	33	1786	21	27.38%	
M O1 7-80	49	291	0.17	0.05834	0.00121	0.07298	0.00140	0.58693	0.01119		543	19	454	8	469	7	3.30%	454
M O1 7-81	163	479	0.34	0.05636	0.00072	0.07423	0.00132	0.57671	0.00677		467	20	462	8	462	4	0.00%	462
M O1 7-82	52	156	0.33	0.05914	0.00109	0.06424	0.00120	0.52375	0.00888		572	18	401	7	428	6	6.73%	401
M O1 7-83	100	241	0.42	0.05697	0.00083	0.08822	0.00160	0.69283	0.00925		490	19	545	9	534	6	-2.02%	545
M O1 7-84	44	105	0.42	0.05738	0.00134	0.07387	0.00143	0.58434	0.01272		506	21	459	9	467	8	1.74%	459
M O1 7-85	156	353	0.44	0.05626	0.00091	0.05669	0.00104	0.43970	0.00658		463	18	355	6	370	5	4.23%	355
M O1 7-86	26	135	0.20	0.05632	0.00114	0.07932	0.00151	0.61583	0.0147		465	19	492	9	487	7	-1.02%	492
M O1 7-87	102	294	0.43	0.05768	0.00092	0.09390	0.00171	0.74663	0.01104		518	18	579	10	566	6	-2.25%	579
M O1 7-88	99	120	0.83	0.06773	0.00131	0.10491	0.00200	0.97963	0.01748		860	18	643	12	693	9	7.78%	643
M O1 7-89	178	427	0.42	0.05642	0.00093	0.05611	0.00103	0.43642	0.00662		469	18	352	6	368	5	4.55%	352

M O1 7- 90	1 0 0	2 1 3	0 . 4 7	0.18 429	0. 00 19 4	0.50 057	0. 00 89 5	12.7 174 1	0. 12 35 9		269 2	1 7	261 6	3 8	265 9	9	2.9 1%	2 6 9 2	1 7
M O1 7- 91	4 3	1 4 6	0 . 2 9	0.05 826	0. 00 13 1	0.07 970	0. 00 15 6	0.64 019	0. 01 32 6		540	2 0	494	9	502	8	1.6 2%	4 9 4	9
M O1 7- 92	1 4 7	2 6 8	0 . 5 5	0.05 273	0. 00 11 3	0.05 551	0. 00 10 6	0.40 351	0. 00 79 9		317	2 0	348	6	344	6	- 1.1 5%	3 4 8	6
M O1 7- 93	4 1	4 5 2	0 . 0 9	0.05 752	0. 00 08 6	0.08 076	0. 00 14 7	0.64 041	0. 00 87 6		512	1 9	501	9	503	5	0.4 0%	5 0 1	9
M O1 7- 94	8 9	9 0	0 . 9 9	0.05 707	0. 00 16 8	0.09 502	0. 00 20 0	0.74 760	0. 02 04 1		494	2 8	585	1 2	567	1 2	- 3.0 8%	5 8 5	1 2
M O1 7- 95	3 8	3 2 2	0 . 1 2	0.05 634	0. 00 09 4	0.07 378	0. 00 13 5	0.57 301	0. 00 88 3		466	1 8	459	8	460	6	0.2 2%	4 5 9	8
M O1 7- 96	5 2	1 8 3	0 . 2 8	0.05 771	0. 00 10 1	0.07 750	0. 00 14 4	0.61 655	0. 00 99 1		519	1 8	481	9	488	6	1.4 6%	4 8 1	9
M O1 7- 97	6 5	2 1 5	0 . 3 0	0.05 875	0. 00 08 9	0.09 446	0. 00 17 2	0.76 510	0. 01 06 5		558	1 9	582	1 0	577	6	- 0.8 6%	5 8 2	1 0
M O1 7- 98	6 1	1 5 5	0 . 3 9	0.05 598	0. 00 11 0	0.08 888	0. 00 16 8	0.68 590	0. 01 24 0		452	1 9	549	1 0	530	7	- 3.4 6%	5 4 9	1 0
M O1 7- 99	4 7	1 6 2	0 . 2 9	0.06 149	0. 00 11 5	0.11 732	0. 00 22 3	0.99 441	0. 01 71 6		656	1 8	715	1 3	701	9	- 1.9 6%	7 1 5	1 3
M O1 7- 10 0	1 9	2 4	0 . 7 8	0.05 537	0. 00 39 8	0.08 074	0. 00 21 4	0.61 629	0. 04 28 8		427	1 0 8	501	1 3	488	2 7	- 2.5 9%	5 0 1	1 3
M O2 6- 01	1 4 3	1 6 0	0 . 9 0	0.18 803	0. 00 12 6	12.5 928 3	0. 08 47 8	0.48 569	0. 00 54 3		272 5	1 0	265 0	6	255 2	2 4	6.7 8%	2 7 2 5	1 0
M O2 6- 02	2 2 6	5 4 9	0 . 4 1	0.05 985	0. 00 05 2	0.62 440	0. 00 52 5	0.07 566	0. 00 08 3		598	1 1	493	3	470	5	4.8 9%	4 7 0	5

M O2 6- 03	4 7 2 2	1 0 2 5	0 . 0 5	0.17 896	0. 00 09 5	10.2 238 5	0. 05 64 9	0.41 432	0. 00 43 9		264 3	1 0	245 5	5	223 5	2 0	18. 26 %		
M O2 6- 04	1 4 6	8 0 6	0 . 0 2	0.05 562	0. 00 04 7	0.51 164	0. 41 7	0.06 672	0. 07 3		437	1 2	420	3	416	4	0.9 6%	4 1 6	4
M O2 6- 05	5 1 0	5 6 0	0 . 0 9	0.16 104	0. 00 08 9	8.32 408	0. 04 76 4	0.37 488	0. 00 40 0		246 7	1 0	226 7	5	205 2	1 9	20. 22 %		
M O2 6- 06	1 1 3	2 0 8	0 . 5 4	0.05 603	0. 00 07 5	0.43 589	0. 55 0	0.05 642	0. 06 7		454	1 3	367	4	354	4	3.6 7%	3 5 4	4
M O2 6- 07	2 0 0	3 0 0	0 . 6 7	0.07 823	0. 00 18 6	1.07 548	0. 02 30 1	0.09 971	0. 00 15 9		115 3	2 0	741	1 1	613	9	20. 88 %		
M O2 6- 08	5 9 0	3 5 6	1 . 6 8	0.12 294	0. 00 16 9	5.86 086	0. 07 53 2	0.34 574	0. 47 6		199 9	1 1	195 5	1	191 4	2 3	4.4 4%	1 9 9 9	1
M O2 6- 09	4 3 0	5 0 9	0 . 8 5	0.05 708	0. 00 05 6	0.44 116	0. 00 41 5	0.05 605	0. 06 3		495	1 1	371	3	352	4	5.4 0%	3 5 2	4
M O2 6- 10	2 1 9	5 6 8	0 . 3 9	0.11 633	0. 00 18 4	3.65 526	0. 04 10 7	0.22 789	0. 25 3		190 1	2 9	156 2	9	132 3	1 3	43. 69 %		
M O2 6- 11	2 7 6	5 2 4	0 . 5 3	0.10 794	0. 00 07 0	3.75 312	0. 43 7	0.25 217	0. 27 4		176 5	1 1	158 3	5	145 0	1 4	21. 72 %		
M O2 6- 12	4 0 1	5 7 3	0 . 7 0	0.06 174	0. 00 05 0	0.89 951	0. 71 1	0.10 566	0. 11 6		665	1 1	651	4	647	7	0.6 2%	6 4 7	7
M O2 6- 13	9 5 6	2 9 6	0 . 3 2	0.05 768	0. 00 06 3	0.66 180	0. 68 7	0.08 321	0. 09 5		518	1 1	516	4	515	6	0.1 9%	5 1 5	6
M O2 6- 14	2 3 1	4 0 8	0 . 5 7	0.05 871	0. 00 06 6	0.46 021	0. 48 6	0.05 685	0. 06 5		556	1 1	384	3	356	4	7.8 7%	3 5 6	4
M O2 6- 15	6 3 0	5 9 0	1 . 0 7	0.12 664	0. 00 12 6	6.17 930	0. 83 9	0.35 387	0. 42 9		205 2	1 0	200 2	8	195 3	2 0	5.0 7%	2 0 5 2	1 0
M O2	6 7	9 3	0 . .	0.06 357	0. 00	0.88 911	0. 01	0.10 143	0. 00		727	1 2	646	6	623	7	3.6 9%	6 2	7

6-16			7 3		08 9		16 5		12 4								3	
M O2 6-17	8 6	1 3 0	0 . 6 6	0.05 688	0. 00 09 9	0.61 797	0. 01 00 1	0.07 879	0. 00 10 2	487	1 6	489	6	489	6	0.0 0%	4 8 9	6
M O2 6-18	7 5	1 2 7	0 . 5 9	0.11 173	0. 00 23 7	4.71 664	0. 08 11 6	0.30 618	0. 00 38 1	182 8	3 9	177 0	1 4	172 2	1 9	6.1 6%	1 8 2 8	3 9
M O2 6-19	1 8 1	2 8 1	0 . 6 4	0.06 074	0. 00 06 8	0.86 815	0. 00 91 9	0.10 366	0. 00 11 9	630	1 1	635	5	636	7	- 0.1 6%	6 3 6	7
M O2 6-20	2 1 9	3 3 4	0 . 6 6	0.21 807	0. 00 11 9	16.8 838 8	0. 09 55 1	0.56 151	0. 00 60 0	296 6	1 0	292 8	5	287 3	2 5	3.2 4%	2 9 6 6	1 0
M O2 6-21	7 0	2 5 1	0 . 2 8	0.05 946	0. 00 06 7	0.65 702	0. 00 69 6	0.08 013	0. 00 09 2	584	1 1	513	4	497	5	3.2 2%	4 9 7	5
M O2 6-22	3 1 1	7 7 1	0 . 4 0	0.05 902	0. 00 04 4	0.67 970	0. 00 49 9	0.08 353	0. 00 09 0	568	1 2	527	3	517	5	1.9 3%	5 1 7	5
M O2 6-23	8 7	1 9 8	0 . 4 4	0.05 813	0. 00 15 5	0.65 030	0. 01 55 0	0.08 114	0. 00 09 8	535	6 0	509	1 0	503	6	1.1 9%	5 0 3	6
M O2 6-24	1 7 3	3 5 3	0 . 4 9	0.05 745	0. 00 07 3	0.64 320	0. 00 76 5	0.08 119	0. 00 09 5	509	1 2	504	5	503	6	0.2 0%	5 0 3	6
M O2 6-25	1 5 8	4 2 6	0 . 3 7	0.06 018	0. 00 05 7	0.67 548	0. 00 61 5	0.08 140	0. 00 09 1	610	1 1	524	4	504	5	3.9 7%	5 0 4	5
M O2 6-26	1 7 8	3 3 8	0 . 2 4	0.05 942	0. 00 04 6	0.65 548	0. 00 49 4	0.08 000	0. 00 08 7	583	1 2	512	3	496	5	3.2 3%	4 9 6	5
M O2 6-27	1 1 0	3 1 3	0 . 3 5	0.05 981	0. 00 07 0	0.66 880	0. 00 73 9	0.08 109	0. 00 09 4	597	1 1	520	4	503	6	3.3 8%	5 0 3	6
M O2 6-28	8 4	1 0 2	0 . 8 2	0.05 984	0. 00 09 0	0.75 093	0. 01 05 6	0.09 102	0. 00 11 3	598	1 4	569	6	562	7	1.2 5%	5 6 2	7
M O2 6-29	8 1	1 3 5	0 . 6 0	0.11 996	0. 00 08 3	5.71 721	0. 03 93 6	0.34 566	0. 00 38 1	195 6	1 0	193 4	6	191 4	1 8	2.1 9%	1 9 5 6	1 0

M O2 6- 30	6 9 3	1 8 3	0 . 3 8	0.11 913	0. 00 08 3	5.33 682	0. 03 67 1	0.32 491	0. 00 35 8		194 3	1 0	187 5	6	181 4	1 7	7.1 1%	1 9 4 3	1 0
M O2 6- 31	7 9 1	2 0 1	0 . 3 9	0.06 451	0. 00 07 3	0.79 743	0. 00 84 5	0.08 966	0. 00 10 4		758	1 1	595	5	554	6	7.4 0%	5 5 4	6
M O2 6- 32	3 7 4	2 2 1	0 . 1 6	0.12 291	0. 00 07 8	5.99 219	0. 03 82 6	0.35 357	0. 00 38 4		199 9	1 1	197 5	6	195 2	1 8	2.4 1%	1 9 9 9	1 1
M O2 6- 33	1 4 2	1 7 5	0 . 8 1	0.05 759	0. 00 07 8	0.61 487	0. 00 77 7	0.07 743	0. 00 09 3		514	1 2	487	5	481	6	1.2 5%	4 8 1	6
M O2 6- 34	1 5 9	4 3 6	0 . 3 7	0.17 675	0. 00 09 8	12.0 560 0	0. 06 90 7	0.49 470	0. 00 52 9		262 3	1 0	260 9	5	259 1	2 3	1.2 4%	2 6 2 3	1 0
M O2 6- 35	1 9 4	2 7 7	0 . 7 0	0.06 370	0. 00 05 8	0.94 168	0. 00 81 6	0.10 722	0. 00 11 9		732	1 1	674	4	657	7	2.5 9%	6 5 7	7
M O2 6- 36	2 6 0	4 6 7	0 . 5 6	0.05 500	0. 00 15 1	0.42 849	0. 01 06 6	0.05 650	0. 00 06 6		412	6 3	362	8	354	4	2.2 6%	3 5 4	4
M O2 6- 37	2 0 0	3 8 7	0 . 5 2	0.05 782	0. 00 06 4	0.44 763	0. 00 46 5	0.05 614	0. 00 06 4		523	1 1	376	3	352	4	6.8 2%	3 5 2	4
M O2 6- 38	4 8 3	6 5 7	0 . 7 3	0.19 613	0. 00 13 9	14.7 264 0	0. 10 43 0	0.54 457	0. 00 62 0		279 4	1 0	279 8	7	280 3	2 6	- 0.3 2%	2 7 9 4	1 0
M O2 6- 39	5 6 3	8 3 6	0 . 6 8	0.10 748	0. 00 24 2	3.99 429	0. 07 52 7	0.26 953	0. 00 33 3		175 7	4 2	163 3	1 5	153 8	1 7	14. 24 %		
M O2 6- 40	5 2 4	8 5 1	0 . 6 1	0.11 910	0. 00 08 9	5.27 158	0. 03 85 6	0.32 102	0. 00 35 9		194 3	1 0	186 4	6	179 5	1 8	8.2 5%	1 9 4 3	1 0
M O2 6- 41	1 9 1	3 1 0	0 . 6 2	0.06 121	0. 00 05 9	0.85 247	0. 00 78 4	0.10 101	0. 00 11 3		647	1 1	626	4	620	7	0.9 7%	6 2 0	7
M O2 6- 42	1 2 0 1	1 0 2 5	1 . 1 7	0.05 290	0. 00 22 2	0.37 755	0. 01 51 2	0.05 177	0. 00 06 4		324	9 8	325	1 1	325	4	0.0 0%	3 2 5	4
M O2	2 3	4 1	0 . .	0.06 178	0. 00	0.83 868	0. 00	0.09 846	0. 00		667	1 1	618	4	605	6	2.1 5%	6 0	6

6-43	7	2	5		05		74		11								5	
M O2 6-44	1766	269	0.66	0.06051	0.00062	0.81470	0.00790	0.09764	0.00110		622	11	605	4	601	6	0.67%	601
M O2 6-45	197	355	0.55	0.18293	0.00107	11.76760	0.0021	0.46655	0.00504		2680	10	2586	6	2468	22	8.59%	2680
M O2 6-46	68	206	0.33	0.06094	0.00062	0.75692	0.00732	0.09008	0.00102		637	11	572	4	556	6	2.88%	556
M O2 6-47	50	256	0.220	0.05738	0.00061	0.61304	0.00616	0.07748	0.00088		506	11	485	4	481	5	0.83%	481
M O2 6-48	5795	1055	0.055	0.08977	0.00112	1.40673	0.00953	0.11365	0.00119		1421	24	892	4	694	7	28.53%	
M O2 6-49	31	3591	0.91	0.05948	0.00207	0.74759	0.00394	0.09115	0.00170		585	38	567	14	562	10	0.89%	562
M O2 6-50	86	21041	0.41	0.05639	0.00147	0.56973	0.00325	0.07328	0.00087		468	59	458	9	456	5	0.44%	456
M O2 6-51	337	2314	0.14	0.05728	0.00060	0.61515	0.00614	0.07789	0.00088		502	11	487	4	484	5	0.62%	484
M O2 6-52	317	3813	0.83	0.06259	0.00050	0.82372	0.00633	0.09545	0.00104		694	11	610	4	588	6	3.74%	588
M O2 6-53	117	98	1.19	0.11425	0.00087	5.06730	0.00778	0.32167	0.00361		1868	10	1831	6	1798	18	3.89%	1798
M O2 6-54	65	25	0.26	0.05873	0.00235	0.46786	0.00710	0.05777	0.00119		557	45	390	12	362	7	7.73%	362
M O2 6-55	141	484	0.29	0.12887	0.00075	6.70974	0.00953	0.37761	0.00405		2083	11	2074	5	2065	19	0.87%	2065
M O2 6-56	68	193	0.35	0.06081	0.00066	0.65585	0.00671	0.07822	0.00089		633	11	512	4	485	5	5.57%	485

M O2 6- 57	1 1 3	3 3 9	0 . 3 4	0.05 475	0. 00 05 6	0.41 882	0. 00 40 8	0.05 548	0. 00 06 2	402	1 1	355	3	348	4	2.0 1%	3 4 8	4
M O2 6- 58	1 2 5	4 4 1	0 . 2 8	0.07 512	0. 00 17 8	1.54 637	0. 03 22 0	0.14 929	0. 00 17 1	107 2	4 9	949	1 3	897	1 0	5.8 0%	8 9 7	1 0
M O2 6- 59	3 2 1	5 5 5	0 . 5 8	0.06 185	0. 00 04 7	0.88 309	0. 00 65 8	0.10 355	0. 00 11 2	669	1 1	643	4	635	7	1.2 6%	6 3 5	7
M O2 6- 60	1 5 6	4 9 0	0 . 3 2	0.07 912	0. 00 05 2	1.58 083	0. 01 02 1	0.14 491	0. 00 15 6	117 5	1 2	963	4	872	9	10. 44 %		
M O2 6- 61	2 0 3	3 1 5	0 . 6 5	0.12 772	0. 00 07 3	5.35 542	0. 03 10 2	0.30 412	0. 00 32 5	206 7	1 1	187 8	5	171 2	1 6	20. 74 %		
M O2 6- 62	1 3 1	2 7 0	0 . 4 9	0.06 320	0. 00 06 1	0.78 723	0. 00 72 2	0.09 034	0. 00 10 1	715	1 1	590	4	558	6	5.7 3%	5 5 8	6
M O2 6- 63	3 0 8	2 1 8	1 . 4 1	0.06 280	0. 00 05 8	0.83 702	0. 00 73 1	0.09 667	0. 00 10 8	701	1 1	617	4	595	6	3.7 0%	5 9 5	6
M O2 6- 64	4 5 7	7 7 3	0 . 5 9	0.05 625	0. 00 04 2	0.43 381	0. 00 31 8	0.05 593	0. 00 06 0	462	1 2	366	2	351	4	4.2 7%	3 5 1	4
M O2 6- 65	2 3 6	4 8 8	0 . 4 8	0.12 182	0. 00 12 5	4.80 734	0. 04 63 7	0.28 622	0. 00 34 7	198 3	1 0	178 6	8	162 3	1 7	22. 18 %		
M O2 6- 66	2 3 1	3 8 2	0 . 6 0	0.05 990	0. 00 04 8	0.78 158	0. 00 60 7	0.09 464	0. 00 10 3	600	1 1	586	3	583	6	0.5 1%	5 8 3	6
M O2 6- 67	2 5 6	8 2 4	0 . 3 1	0.05 845	0. 00 04 0	0.56 272	0. 00 38 4	0.06 983	0. 00 07 5	547	1 2	453	2	435	5	4.1 4%	4 3 5	5
M O2 6- 68	7 0 8	7 2 3	0 . 9 8	0.06 454	0. 00 04 9	0.80 889	0. 00 59 7	0.09 091	0. 00 09 9	759	1 2	602	3	561	6	7.3 1%	5 6 1	6
M O2 6- 69	7 3 4	1 8 9	0 . 3 9	0.06 188	0. 00 03 9	0.62 287	0. 00 38 9	0.07 301	0. 00 07 8	670	1 3	492	2	454	5	8.3 7%	4 5 4	5
M O2	1 6	1 8	0 . .	0.05 963	0. 00	0.78 332	0. 00	0.09 527	0. 00	590	1 1	587	4	587	6	0.0 0%	5 8	6

6-70	0	7	8		06		75		10								7	
M O2 6-71	106	239	044	0.05620	0.00060	0.43608	0.00442	0.05627	0.00064		460	11	367	3	353	4	3.97%	353
M O2 6-72	146	403	0336	0.12369	0.00067	5.98967	0.03359	0.35121	0.00373		2010	11	1974	5	1940	18	3.61%	2010
M O2 6-73	162	256	063	0.06502	0.00053	1.04088	0.00820	0.11610	0.00127		775	11	724	4	708	7	2.26%	708
M O2 6-74	137	269	051	0.06079	0.00053	0.70827	0.00592	0.08450	0.00093		632	11	544	4	523	6	4.02%	523
M O2 6-75	146	133	110	0.12566	0.00083	6.19140	0.0080	0.35735	0.00391		2038	10	2003	6	1970	19	3.45%	2038
M O2 6-76	17	30	057	0.06437	0.000149	0.80006	0.00695	0.09015	0.00135		754	22	597	10	556	8	7.37%	556
M O2 6-77	138	274	050	0.05403	0.00060	0.40260	0.00419	0.05404	0.00061		372	11	344	3	339	4	1.47%	339
M O2 6-78	327	637	051	0.05400	0.00044	0.40374	0.00320	0.05423	0.00059		371	12	344	2	340	4	1.18%	340
M O2 6-79	168	350	048	0.05848	0.000138	0.64345	0.00335	0.07980	0.00091		548	53	504	8	495	5	1.82%	495
M O2 6-80	25	81	030	0.05932	0.00090	0.63557	0.00898	0.07770	0.00096		579	14	500	6	482	6	3.73%	482
M O2 6-81	20	53	037	0.13658	0.000114	7.32111	0.00899	0.38877	0.00451		2184	10	2151	7	2117	21	3.16%	2184
M O2 6-82	50	671	007	0.05896	0.00045	0.65027	0.00483	0.07999	0.00087		566	12	509	3	496	5	2.62%	496
M O2 6-83	281	493	057	0.05987	0.00043	0.78658	0.00553	0.09529	0.00103		599	12	589	3	587	6	0.34%	587

M O2 6- 84	1 1 1	2 4 9	0 . 4 5	0.05 649	0. 00 05 6	0.61 555	0. 00 58 2	0.07 903	0. 00 08 9		472	1 1	487	4	490	5	- 0.6 1%	4 9 0	5
M O2 6- 85	4 8	2 6 8	0 . 1 8	0.12 717	0. 00 09 2	6.05 203	0. 04 27 6	0.34 516	0. 00 38 4		205 9	1 0	198 3	6	191 1	1 8	7.7 4%	2 0 5 9	1 0
M O2 6- 86	2 0 1	4 2 6	0 . 4 7	0.05 445	0. 00 05 1	0.40 660	0. 00 36 4	0.05 416	0. 00 06 0		390	1 1	346	3	340	4	1.7 6%	3 4 0	4
M O2 6- 88	2 6 4	2 9 4	0 . 9 0	0.05 883	0. 00 05 5	0.74 037	0. 00 65 9	0.09 127	0. 00 10 1		561	1 1	563	4	563	6	0.0 0%	5 6 3	6
M O2 6- 89	1 6 6	2 7 4	0 . 6 1	0.06 061	0. 00 07 2	0.78 952	0. 00 88 4	0.09 448	0. 00 11 0		625	1 1	591	5	582	6	1.5 5%	5 8 2	6
M O2 6- 90	9 0 0	7 0 0	1 . 2 9	0.12 580	0. 00 10 3	6.44 358	0. 05 12 3	0.37 149	0. 00 42 7		204 0	1 0	203 8	7	203 6	2 0	0.2 0%	2 0 4 0	1 0
M O2 6- 91	5 5 6	2 7 6	0 . 2 0	0.16 575	0. 00 21 3	10.0 307 4	0. 07 05 7	0.43 892	0. 00 47 1		251 5	2 2	243 8	6	234 6	2 1	7.2 0%	2 5 1 5	2 2
M O2 6- 92	5 8 0	6 0 0	0 . 1 0	0.06 886	0. 00 04 3	1.12 881	0. 00 71 0	0.11 889	0. 00 12 7		895	1 2	767	3	724	7	5.9 4%	7 2 4	7
M O2 6- 93	5 0 5	8 1 9	0 . 6 2	0.06 245	0. 00 04 2	0.86 075	0. 00 56 6	0.09 996	0. 00 10 7		690	1 2	631	3	614	6	2.7 7%	6 1 4	6
M O2 6- 94	1 3 4	1 0 1	1 . 3 3	0.12 633	0. 00 08 3	6.16 925	0. 04 03 3	0.35 417	0. 00 38 7		204 8	1 0	200 0	6	195 4	1 8	4.8 1%	2 0 4 8	1 0
M O2 6- 95	1 1 9	2 4 7	0 . 4 8	0.12 748	0. 00 07 7	6.16 356	0. 03 72 4	0.35 065	0. 00 37 7		206 4	1 1	199 9	5	193 8	1 8	6.5 0%	2 0 6 4	1 1
M O2 6- 96	3 3 0	9 8 1	0 . 3 4	0.05 514	0. 00 03 8	0.46 639	0. 00 31 8	0.06 135	0. 00 06 6		418	1 3	389	2	384	4	1.3 0%	3 8 4	4
M O2 6- 97	2 7	5 2	0 . 5 1	0.15 649	0. 00 11 6	9.15 768	0. 06 62 8	0.42 443	0. 00 48 1		241 8	1 0	235 4	7	228 1	2 2	6.0 1%	2 4 1 8	1 0
M O2	1 3	1 9	0 . .	0.06 311	0. 00	1.02 176	0. 00	0.11 743	0. 00		712	1 1	715	5	716	8	- 0.1	7 1	8

6-98	8	0	7 3		06 3		96 5		13 3								4%	6	
M O2 6- 99	1 8 1	2 5 5	0 . 7 1	0.13 196	0. 00 07 5	6.91 472	0. 04 00 8	0.38 003	0. 00 40 6		212 4	1 1	210 1	5	207 6	1 9	2.3 1%	2 1 2 4	1 1
M O2 6- 10 0	4 0	6 1	0 . 6 5	0.06 028	0. 00 12 0	0.74 059	0. 01 35 8	0.08 910	0. 00 12 3		614	1 9	563	8	550	7	2.3 6%	5 5 0	7

Graphical abstract

Highlights

Variscan Southern Massif Central Foreland basin helps to decipher tectonic events

Early Devonian and Carboniferous detrital zircon provenance is investigated

11 samples yielded U-Pb age spectra ranging from Neoproterozoic to Late Paleozoic

Rifting, volcanic, and plutonic events with a multi-recycling history are suggested